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AD-675 900

**A DDC BIBLIOGRAPHY ON  
COST EFFECTIVENESS ANALYSIS**

**VOLUME I of IV VOLUMES**

**DDC-TAS-68-14**

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**AUGUST 1968**

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DEFENSE SUPPLY AGENCY**

U N C L A S S I F I E D - U N L I M I T E D

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Cameron Station, Alexandria, Virginia 22314

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## P R E F A C E

This bibliography consists of a compilation of 160 Unclassified-Unlimited references, pertaining to Cost Effectiveness Analysis, selected from the DDC collection and covering a period from 1967 through the first half of 1968.

This report is an update of DDC report bibliographies on Cost Effectiveness Analysis: AD-808 900, AD-808 901, AD-808 902, AD-379 600, AD-379 601, AD-379-602 and AD-379 603.

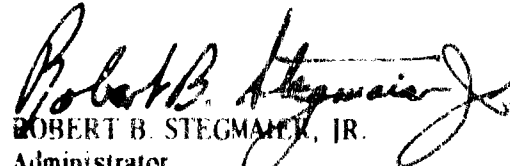
Cost Effectiveness Analysis and Cost in this volume relate to program evaluations, management techniques, research and development decision making, management problems, design tradeoffs, related cost analysis and methodology, and systems value engineering.

Individual entries are arranged by AD number in numerical sequence. Computer-generated indexes of Title, Corporate Author, Subject, Personal Author, Contract Number, Report Number and AD-Numeric are also included.

This Volume (I) is supplemented by Volume II (AD-840 900) Unclassified-Limited, Volume III (AD-393 202) Secret, and Volume IV (AD-393 203) Secret Restricted Data.

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ROBERT B. STEGMAIER, JR.  
Administrator  
Defense Documentation Center

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OPTIMALITY OF MYOPIC INVENTORY POLICIES FOR SEVERAL SUBSTITUTE PRODUCTS,  
OPTIMUM MAINTENANCE WITH INCOMPLETE INFORMATION,  
PROCESS FUNCTION FOR RAIL LINEHAUL OPERATIONS,  
PROCUREMENT: MULTIPLE INCENTIVE CONTRACTING, SCIENTIFIC CONTRACTING WITH ACCENT ON TRADE-  
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SOME COMMENTS ON SYSTEMS ANALYSIS,  
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STUDY OF DOCUMENTATION PROCEDURES AND MECHANISMS,  
SYSTEM DESIGN: EVALUATION AND COSTING--IN PLAIN ENGLISH,  
TOWARD A STUDY OF BIDDING PROCESSES. PART IV, GAME WITH UNKNOWN COSTS,  
TRAINING TIME AND COSTS FOR NAVY MATING AND RECS,  
TWO PAPERS ON ADAPTIVE INVENTORY CONTROL,  
UNINTERRUPTIBLE POWER SYSTEM MODULE ANALYSIS,  
WIDEBAND DIGITAL MODULATION AND DETECTION TECHNIQUES FOR TROPOSCATTER,

TOTAL TITLES

27

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-646 847 13/13 15/3  
HAYES SEAY MATTEN AND MATTEN ROANOKE VA  
METHODS OF SHELTER COST ANALYSIS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 67 168P BARKSDALE, BYRD H. ;  
WADE, SAMUEL R. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FALLOUT SHELTERS, COSTS), DATA  
PROCESSING SYSTEMS, STANDARDS, DESIGN,  
CONSTRUCTION MATERIALS, LIGHTING EQUIPMENT,  
COOLING + VENTILATING EQUIPMENT, LABOR,  
MAINTENANCE, CONSTRUCTION, BUILDINGS, CIVIL  
DEFENSE SYSTEMS (U)

THE REPORT PRESENTS THE RESULTS OF AN EXAMINATION  
OF COMPUTER METHODS OF DETERMINING IMMEDIATE AND  
LONG-TERM TOTAL COST OF SHELTER INCORPORATED WITHIN A  
BUILDING AT A PRELIMINARY DESIGN STAGE. ALL COST  
ITEMS COMPRISING TOTAL COST WERE INVESTIGATED AND  
ANALYZED. THIS STUDY CONCLUDED THAT MANY OF THE  
ITEMS COMPRISING LONG-TERM TOTAL COST WERE  
INDETERMINATE TO SUCH A DEGREE THAT COMPUTER METHODS  
OF ANALYSIS WOULD NOT PRODUCE DEFENSIBLE ESTIMATES.  
TO DEVELOP A METHOD OF SHELTER COST ANALYSIS, AT A  
PRELIMINARY DESIGN STAGE, WILL REQUIRE DEVELOPMENT OF  
STANDARDS AND DESIGN LOGIC TO ANALYZE THE EFFECTS OF  
CHANGES IN BUILDING GEOMETRY AND COMPONENTS TO  
PROVIDE PROTECTION AGAINST EFFECTS OF NUCLEAR  
WEAPONS. THESE FACTORS, WHICH MAY BE IDENTIFIED,  
INFLUENCE COSTS AND A PROGRAM MAY BE DEVELOPED TO  
ACCOUNT FOR THE FACTORS IN PRODUCING ESTIMATES.  
ONCE THIS DATA IS DEVELOPED, AND WITH THE  
APPLICATION OF AN IN-PLACE UNIT METHOD OF  
COST ESTIMATING, REALISTIC IMMEDIATE ALTERNATIVE  
SHELTER COST ESTIMATES MAY BE PRODUCED. IT IS  
BELIEVED THAT DEVELOPMENT AND IMPLEMENTATION OF THESE  
TECHNIQUES WOULD MAKE IT PRACTICAL TO QUICKLY ASSESS  
PROTECTION FACTORS AND THE IMPACT OF COST OF CHANGES  
IN GEOMETRY, MASS, APERTURE, LIGHTING AND  
VENTILATION. PROBABLY ONE OF THE MOST USEFUL  
APPLICATIONS WOULD BE IN SENSITIVITY ANALYSIS OF  
SEVERAL ALTERNATIVES TO DETERMINE OPTIMUM SHELTER  
COST. (AUTHOR) (U)

UNCLASSIFIED



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DGC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 057 13/2 13/13 5/1  
RAND CORP SANTA MONICA CALIF  
THE GRAND CANYON CONTROVERSY: LESSONS FOR FEDERAL  
COST-BENEFIT PRACTICES, (U)  
FEB 67 22P CARLIN, ALAN ;  
REPT. NO. P-3505

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER SUPPLIES, DAMS), (\*DAMS,  
CONSTRUCTION), ECONOMICS, UNITED STATES  
GOVERNMENT, NUCLEAR POWER PLANTS, RECLAMATION,  
COSTS, ELECTRIC POWER PRODUCTION, TRANSMISSION  
LINES, POWER PLANTS(ESTABLISHMENTS) (U)

THE LATEST ROUND OF THE GRAND CANYON  
CONTROVERSY PROVIDES AMPLE MATERIAL CONCERNING THE  
DEFICIENCIES OF THE ECONOMIC CRITERIA CURRENTLY USED  
BY FEDERAL WATER RESOURCE AGENCIES. IT IS THE  
PURPOSE OF THIS ARTICLE TO REVIEW THIS MATERIAL.  
ALTHOUGH THE CONTROVERSY OVER THE DAMS HAS LED TO A  
REVERSAL OF THE ADMINISTRATION'S STAND ON THEM AND  
SOME EXPRESSIONS BY THE LEADERSHIP OF THE INTERIOR  
DEPARTMENT OF A DESIRE TO EXAMINE ALTERNATIVES TO  
THESE PARTICULAR DAMS AND IN THE FUTURE TO ALL  
PROJECTS BEFORE THEY ARE SUBMITTED TO CONGRESS,  
THERE IS LITTLE INDICATION THAT THE ADMINISTRATION  
PLANS THE MAJOR OVERHAUL OF THE ECONOMIC CRITERIA AND  
PROJECT REVIEW PROCEDURES THAT WOULD BE REQUIRED TO  
INSURE THAT THE FUTURE DEVELOPMENT OF WATER RESOURCES  
WOULD BE MORE IN ACCORD WITH ECONOMIC PRINCIPLES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 243 13/10 9/2  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS. A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. USNS BLUE JACKET, AN M. S. T. S.  
REFRIGERATED SHIP. USNS COMET, AN M. S. T. S. ROLL-  
ON, ROLL-OFF SHIP. (U)  
JAN 67 47P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY  
DEPARTMENT OF COMMERCE, WASHINGTON, D. C.

DESCRIP ORS: (\*FUNCTIONAL ANALYSIS, \*MERCHANT  
VESSELS), DATA STORAGE SYSTEMS, COSTS, WAGES,  
COMPUTERS, MAINTENANCE, TIME (U)

THIS REPORT IS ONE IN A SERIES DETAILING THE  
RESULTS OF SYSTEMS ANALYSIS WORK ABOARD TWENTY  
(20) DIFFERENT MERCHANT SHIPS. IT PRESENTS  
INFORMATION RELATING TO ONE OF THESE SHIPS. THIS  
REPORT ALSO DESCRIBES A SYSTEM FOR THE RETRIEVAL AND  
ANALYSIS OF DATA REQUIRED FOR THE EFFECTIVE  
MANAGEMENT OF A SHIP. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 393 1/2 1/5 5/3  
SYSTEMS ANALYSIS AND RESEARCH CORP BOSTON MASS  
AIR TRAFFIC GROWTH, AIRLINE FINANCES, AND PUBLIC  
BENEFITS IN RELATION TO THE COST OF NEW PROGRAMS TO  
ALLEVIATE JET AIRCRAFT NOISE NEAR AIRPORTS. (U)  
JAN 67 135P  
REPT. NO. XG-489-67  
CONTRACT: FA-67-WA-1656

UNCLASSIFIED REPORT

DESCRIPTORS: (\*JET PLANE NOISE, AIRPORTS),  
(\*AIRPORTS, CIVIL AVIATION), AIR TRAFFIC,  
COSTS, JET TRANSPORT PLANES, AIR TRANSPORTATION,  
JET ENGINE NOISE, ECONOMICS, TURBOPROP  
ENGINES (U)

EFFECTIVE NEW PROGRAMS FOR COPING WITH AIRCRAFT  
NOISE PROBLEMS AROUND AIRPORTS WILL PROBABLY INVOLVE  
NEW EXPENDITURES. IF SUCH COSTS ARE PASSED ON TO  
AIRLINE TRAFFIC, THEY WILL AFFECT TRAFFIC GROWTH  
THROUGH PRICE ELASTICITY OF DEMAND. A 1-PERCENT  
INCREASE IN FARES AND RATES IS ESTIMATED TO DECREASE  
TRAFFIC BY 1.3 PERCENT; A 5-PERCENT INCREASE WOULD  
REDUCE TRAFFIC BY 6.3 PERCENT. SEPARATE  
ELASTICITIES ARE ESTIMATED BY MAJOR AIRLINE GROUPS:  
-1.28 FOR DOMESTIC TRUNKLINE PASSENGERS, -1.6 FOR  
INTERNATIONAL PASSENGERS, -1.0 FOR LOCAL SERVICE  
PASSENGERS, AND -1.5 FOR CARGO TRAFFIC. THE  
AIRLINES APPEAR TO HAVE A COMFORTABLE FINANCIAL  
FUTURE TO COVER ALL EXPENSES AND A FAIR RETURN ON  
INVESTMENT, BUT NOT SUFFICIENT TO PAY LARGE  
ADDITIONAL EXPENSES OUT OF FORECAST REVENUES WITHOUT  
PAISING THEIR FARE AND RATE LEVELS. THE DIRECT  
BENEFICIARIES OF AIR TRANSPORTATION -- PASSENGERS AND  
SHIPPERS -- ARE THE LOGICAL PERSONS TO PAY FOR NOISE  
PROGRAMS, THROUGH THE PRICING SYSTEM OF AIRLINES AND  
THE COSTS OF GENERAL AVIATION FLYING. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 613 13/10 5/1 5/9  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. THE SS HAWAIIAN MERCHANT: A DRY  
CARGO SHIP IN THE U.S. PACIFIC COAST-HAWAIIAN  
SERVICE. (U)  
JAN 67 36P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MERCHANT VESSELS, SYSTEMS  
ENGINEERING), (\*CARGO SHIPS, MANPOWER),  
COSTS, LABOR, WAGES, JOB ANALYSIS,  
SHIPPING(MARINE), MANAGEMENT ENGINEERING,  
FUNCTIONAL ANALYSIS, SHIPS(NONMILITARY) (U)

THIS REPORT IS ONE IN A SERIES DETAILING THE  
RESULTS OF SYSTEMS ANALYSIS WORK ABOARD TWENTY  
(20) DIFFERENT MERCHANT SHIPS. IT PRESENTS  
INFORMATION RELATING TO ONE OF THESE SHIPS. THIS  
REPORT ALSO DESCRIBES A SYSTEM FOR THE RETRIEVAL AND  
ANALYSIS OF DATA REQUIRED FOR THE EFFECTIVE  
MANAGEMENT OF A SHIP. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. 000123

AD-647 753            13/10

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS, A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP: THE SS EDGAR F. LUCKENBACH, A DRY  
CARGO SHIP IN THE INTER-COASTAL TRADE. (U)

JAN 67    38P

CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CARGO SHIPS, SYSTEMS  
ENGINEERING), (\*MERCHANT VESSELS, FUNCTIONAL  
ANALYSIS), COSTS, COMMERCE, MANAGEMENT  
ENGINEERING, INFORMATION RETRIEVAL,  
TRANSPORTATION, MANPOWER, WAGES, JOB ANALYSIS (U)

THIS REPORT IS ONE IN A SERIES DETAILING THE  
RESULTS OF SYSTEMS ANALYSIS WORK ABOARD TWENTY  
(20) DIFFERENT MERCHANT SHIPS. IT PRESENTS  
INFORMATION RELATING TO ONE OF THESE SHIPS. THIS  
REPORT ALSO DESCRIBES A SYSTEM FOR THE RETRIEVAL AND  
ANALYSIS OF DATA REQUIRED FOR THE EFFECTIVE  
MANAGEMENT OF A SHIP. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 975 16/4 9/2 14/1  
RAND CORP SANTA MONICA CALIF  
MISCOM: AN INDIVIDUAL MISSILE WEAPON SYSTEM COMPUTER  
COST MODEL. (U)  
FER 67 145P CLAPP, R. E. BROEN, H. E.  
, JR;  
REPT. NO. PM-5142-1-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COMPUTER PROGRAMS, \*COSTS),  
(\*GUIDED MISSILE COMPUTERS, COSTS), GUIDED  
MISSILES, MODELS(SIMULATIONS), COMPUTER  
PERSONNEL, AIRFRAMES, WEAPON SYSTEMS (U)  
IDENTIFIERS: MIS COM (U)

THE REPORT CONTAINS AN EXPLANATION OF THE COST  
MODEL AND COMPUTER PROGRAM USED BY THE RAND COST  
ANALYSIS DEPARTMENT IN DETERMINING THE RESOURCE  
REQUIREMENTS OF MISSILE SYSTEMS. THE MODEL CAN  
COST ALL TYPES OF MISSILE SYSTEMS; WITHIN A TYPE, IT  
CAN HANDLE, FOR EXAMPLE, 2 GUIDANCE SYSTEMS, 3 TYPES  
OF AIRFRAME/MOTOR AND 3 TYPES OF AIRCRAFT AT ONCE.  
PERSONNEL REQUIREMENTS CAN BE COMPUTED FOR SAC,  
ADC, OR TAC SYSTEMS, OR CAN BE INPUTS. THE  
TYPE OF INPUT DATA NEEDED IS LISTED. THE COMPUTER  
PROGRAM IS DESCRIBED, INCLUDING THE FLOW OF  
OPERATIONS, INPUT PROCEDURES, OUTPUT FORMATS, AND A  
SYMBOLIC LISTING OF THE FORTRAN-IV SOURCE  
PROGRAM. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 136 5/3 15/5  
RAND CORP SANTA MONICA CALIF  
ON THE SEPARATION OF PRODUCTION FROM THE  
DEVELOPER,  
FEB 67 17P ARDITTI, FRED D. ;  
REPT. NO. P-3542

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PROCUREMENT, COSTS), (\*WEAPON  
SYSTEMS, PROCUREMENT), (\*INDUSTRIAL PRODUCTION,  
WEAPON SYSTEMS), AIRCRAFT INDUSTRY, GOVERNMENT  
PROCUREMENT, DEFENSE SYSTEMS, MATHEMATICAL  
MODELS

(U)

THE PAPER PRESENTS A MODEL WHICH POINTS TOWARD THE  
CORRECT WAY IN WHICH THE COST OF SEPARATION SHOULD BE  
MEASURED. THE MODEL IS APPLIED TO THE TWO CASES OF  
CO-PRODUCTION WHICH OCCURRED IN THE AIRCRAFT INDUSTRY  
-- THE F-84F AND THE B-47E. THE ADDED COST  
THAT THE CUSTOMER INCURRED FROM SEPARATION WAS  
CALCULATED TO BE 6.6 PERCENT ABOVE THE COST THAT  
WOULD HAVE BEEN INCURRED IF SEPARATION HAD BEEN  
AVOIDED. A SIMILAR CALCULATION YIELDED 7.0 PERCENT  
FOR THE CASE OF THE B-47E. IF THESE EXTRA COST  
ESTIMATES ARE REPRESENTATIVE, THEN THE COSTS OF  
SEPARATION APPEAR TO BE SUBSTANTIAL. THIS  
STATEMENT IS FURTHER REINFORCED IF ONE ADDS TO THE  
ABOVE COST FIGURES THE PRODUCTION LICENSING FEES  
CHARGED BY THE DEVELOPER. ON THE OTHER HAND, IT IS  
POINTED OUT THAT THE THREAT OF SEPARATION MADE  
CREDIBLE BY THE UNDERTAKING OF A FEW SUCH CASES BY  
THE GOVERNMENT MAY MAKE THE AIRCRAFT INDUSTRY MORE  
COMPETITIVE. CERTAINLY THERE ARE COST BENEFITS TO  
BE DERIVED BY THE GOVERNMENT FROM FOSTERING SUCH  
COMPETITION. WHETHER OR NOT THESE BENEFITS OFFSET  
THE ADDED COST OF SEPARATION REMAINS TO BE SHOWN.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 409 12/2 5/3 13/8  
CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER  
THE COST FUNCTION. (U)  
DESCRIPTIVE NOTE: RESEARCH REPT.,  
JAN 67 47P SHEPPARD, RONALD W. J  
REPT. NO. ORC-67-5  
CONTRACT: NONR-222(83), NSF-GP-4593  
PROJ: NR-047-033

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COSTS, \*INDUSTRIAL PRODUCTION),  
OPERATIONS RESEARCH (U)

THE REPORT DISCUSSES THE FOLLOWING: THE  
PRODUCTION STRUCTURE; DEFINITION OF THE COST  
FUNCTION; GEOMETRIC INTERPRETATION OF THE COST  
FUNCTION; PROPERTIES OF THE MINIMUM TOTAL COST  
FUNCTION; COST FUNCTION OF A HOMOTHETIC PRODUCTION  
STRUCTURE; COST STRUCTURE; EFFICIENT PRICE VECTORS  
OF THE COST STRUCTURE; MINIMUM OUTPUT FUNCTION; AND  
COST STRUCTURE OF HOMOTHETIC PRODUCTION STRUCTURE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 507 13/13 14/1  
NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF  
HYDRAULIC-PNEUMATIC FLOATING FENDER - ADDITIONAL IN-  
SERVICE TESTS, SECOND SERIES. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAR 67 28P LEE, T. T. I  
REPT. NO. NCEL-TR-516  
PROJ: YF015-10-03-315

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PIERS, VIBRATION ISOLATORS),  
(\*VIBRATION ISOLATORS, FLOATS), DAMAGE,  
PNEUMATIC DEVICES, HYDRAULIC SYSTEMS, ENERGY,  
ABSORPTION, FLOATING BODIES, SHIPS, COST  
EFFECTIVENESS (U)

TWO EXPERIMENTAL HYDRAULIC-PNEUMATIC FLOATING  
FENDERS UNDERWENT IN-SERVICE TESTS AT TWO SITES IN  
SAN DIEGO BAY FOR 12 MONTHS. A PREVIOUS  
SERIES OF IN-SERVICE TESTS WITH THE SAME FENDERS  
LASTED 19 MONTHS - 14 MONTHS IN A WELL-PROTECTED  
HARBOR (PORT HUENEME, CALIFORNIA) AND THEN 5  
MONTHS IN A MODERATELY EXPOSED HARBOR (SAN  
DIEGO). EACH FENDER CONSISTS OF A BULKHEAD  
(50 FEET LONG) FRONTED WITH TWO AIR-FILLED AND  
TWO WATER-FILLED RUBBER BAGS, CHAINS WITH WEIGHTS TO  
MAINTAIN THE TOTAL ASSEMBLY IN POSITION, AND A KEEL  
WITH CONCRETE BALLAST. TWO UNITS ARE NECESSARY TO  
SERVE ONE BERTH. EACH FENDER ASSEMBLY HAS A TOTAL  
MINIMUM ENERGY-ABSORPTION CAPACITY OF 490 INCH-TONS  
AND A MAXIMUM OF 2,300 INCH-TONS. DURING THE  
SECOND SERIES OF TESTS THE FENDERS SERVED  
APPROXIMATELY 50 NAVAL AND MERCHANT SHIPS  
SATISFACTORILY. DESPITE THEIR HIGH COMBINED  
INITIAL AND MAINTENANCE COSTS, THE TEST FENDERS WOULD  
BE ECONOMICAL AND FEASIBLE FOR BOTH SHELTERED AND  
EXPOSED LOCATIONS WHERE MECHANICAL DAMAGE BY SHIPS  
AND BIOLOGICAL DETERIORATION BY MARINE BORERS TO  
FIXED FENDER SYSTEMS CONSTITUTE A SERIOUS PROBLEM.  
THE FENDERS SHOULD BE USEFUL IN INCREASING THE  
ENERGY-ABSORPTION CAPACITY OF EXISTING PIER FENDER  
SYSTEMS. THE COST EFFECTIVENESS OF THE TEST  
FENDERS IS COMPARED WITH SOME OTHER NEW CONCEPTS  
WHICH ARE PROMISING AND WHICH MAY BE MORE FAVORABLE  
THAN THE TEST FENDERS. IT IS RECOMMENDED THAT THE  
IN-SERVICE TESTS OF THE EXPERIMENTAL FENDER BE  
CONTINUED UNTIL THE END OF FISCAL YEAR 1967 AND  
THAT CONSIDERATION BE GIVEN TO TESTING AND EVALUATING  
A FLOATING FENDER SYSTEM CONSISTING OF RUBBER TUBES  
AND ASSEMBLED IN A DOUBLE LAYER BETWEEN TIMBER (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 554 14/1 17/2.1  
NAVY ELECTRONICS LAB SAN DIEGO CALIF  
COST-EFFECTIVENESS ANALYSIS APPLIED TO HF  
COMMUNICATIONS LINK. (U)  
DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT., JUN  
65-SEP 66,  
JAN 67 63P DISHONG, W. R. , JR.;  
MARLOTH, R. T. J  
REPT. NO. NEL-1422  
PROJ: XF-006-01-07  
TASK: 7592

UNCLASSIFIED REPORT

DESCRIPTOR : (\*COMMUNICATION SYSTEMS, \*COST  
EFFECTIVENESS), STATISTICAL ANALYSIS, HIGH  
FREQUENCY, NAVAL EQUIPMENT, SYSTEMS ENGINEERING (U)

A STATISTICAL METHOD FOR ANALYZING COST-  
EFFECTIVENESS DEVELOPED EARLIER AT NEL IS APPLIED  
TO AN HF FLEET BROADCAST LINK AS A DEMONSTRATION OF  
FEASIBILITY. THE CONTRIBUTIONS OF VARIOUS SYSTEM  
PARAMETERS TO OVERALL SYSTEM PERFORMANCE ARE  
ESTABLISHED BY MEANS OF A PERFORMANCE MODEL.  
INFORMATION RELIABILITY AND INFORMATION RATE ARE  
CONSIDERED. LATER WORK WILL INCORPORATE OTHER  
OBJECTIVES INTO THE OVERALL MODEL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 070123

AD-648 748 1/5 5/3  
CALIFORNIA UNIV BERKELEY INST OF TRANSPORTATION AND  
TRAFFIC ENGINEERING  
ALLOCATING THE COSTS OF ALLEVIATING SUBSONIC JET  
AIRCRAFT NOISE. (U)  
DESCRIPTIVE NOTE: SPECIAL REPT.,  
FEB 67 27P DYGERT, PAUL K. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, \*JET PLANES), (\*COSTS,  
NOISE); AIR TRANSPORTATION; AIRPORTS; URBAN  
AREAS; UNITED STATES GOVERNMENT; MONEY;  
TRANSPORTATION (U)

THE PROBLEM OF AIRCRAFT NOISE AROUND AIRPORTS  
CONTAINS TWO PRINCIPAL ELEMENTS: (1) QUIET JET  
AIRCRAFT ARE AND WILL REMAIN (BARRING MAJOR  
PROGRESS IN AIRFRAME AND ENGINE TECHNOLOGY)  
PROHIBITIVELY INEFFICIENT IN TERMS OF PAYLOAD AND  
REVENUE-GENERATING CAPACITY; (2) JET AIRPORTS  
ARE AND WILL REMAIN (BARRING CHANGES IN LAND-USE  
AND TRANSPORTATION PLANNING) CENTERS OF ECONOMIC  
ACTIVITY, INCLUDING DENSE RESIDENTIAL DEVELOPMENT.  
CONFLICTS IN PUBLIC POLICY ALSO APPEAR TO HAVE  
CONTRIBUTED TO THE NOISE PROBLEM. ON THE ONE HAND,  
IT IS IN THE PUBLIC INTEREST TO KEEP NOISE AT AS LOW  
A LEVEL AS POSSIBLE; ON THE OTHER HAND, AIRCRAFT  
BECOME TECHNICALLY LESS EFFICIENT AND MORE COSTLY AS  
THEY ARE MADE QUIETER. PUBLIC POLICY ENCOURAGES  
BOTH A QUIET SOCIETY AND THE DEVELOPMENT OF MORE  
EFFICIENT AIR TRANSPORTATION. FINALLY, UNDER U.  
S. TRANSPORTATION POLICY, AIRLINES ARE PRIVATE  
ENTERPRISES, FREE TO MAKE THEIR OWN BUSINESS  
DECISIONS WITHIN ECONOMIC AND SAFETY CONSTRAINTS.  
SINCE THE AIR CARRIERS DO NOT PAY THE COSTS OF  
AIRCRAFT NOISE, THEY TEND TO IGNORE THESE COSTS IN  
MAKING BUSINESS DECISIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 750 9/2 5/1  
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF  
MANAGEMENT HANDBOOK FOR THE ESTIMATION OF COMPUTER  
PROGRAMMING COSTS. (U)  
DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
MAR 67 149P NELSON, E. A. ;  
REPT. NO. TM-3225/000/01  
CONTRACT: AF 19(628)-5166; F19628-57-C-0132  
MONITOR: ESD TR-67-66

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PROGRAMMING(COMPUTERS),  
COSTS), (\*COMPUTER PROGRAMS, COSTS),  
MANAGEMENT ENGINEERING, HANDBOOKS, STATISTICAL  
ANALYSIS, EQUATIONS, MAINTENANCE, DATA  
PROCESSING SYSTEMS, DOCUMENTATION (U)

GUIDELINES ARE PRESENTED TO HELP MANAGERS ESTIMATE  
THE COSTS OF COMPUTER PROGRAMMING. THE GUIDELINES  
SUMMARIZE A STATISTICAL ANALYSIS OF 169 COMPUTER  
PROGRAMMING EFFORTS WITH EQUATIONS TO ESTIMATE MAN  
MONTHS, COMPUTER HOURS, AND MONTHS ELAPSED, AND ALSO  
PLANNING FACTORS SUCH AS MAN MONTHS PER THOUSAND  
INSTRUCTIONS. OPINIONS, RULES OF THUMB, AND  
EXPERIENCE DATA BASED UPON LITERATURE SEARCH AND  
EXPERIENCE SUPPLEMENT THE STATISTICAL RESULTS.  
FORMS WITH THE GUIDELINES ARE ORGANIZED INTO SIX  
SECTIONS CORRESPONDING TO A SIX-STEP DIVISION OF THE  
COMPUTER PROGRAMMING PROCESS. ADVICE IS GIVEN ON  
THE INTEGRATION OF COST ESTIMATES INTO A COST  
ANALYSIS TO JUSTIFY AND PLAN ADP PROJECTS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 806 18/5 10/2  
RAND CORP SANTA MONICA CALIF  
THE GRAND CANYON CONTROVERSY -- 1967: FURTHER  
ECONOMIC COMPARISONS OF NUCLEAR ALTERNATIVES, (U)  
MAR 67 20P CARLIN, ALAN P. ;  
HOEHN, WILLIAM E. ;  
REPT. NO. P-3546

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-648 807.

DESCRIPTORS: (\*NUCLEAR POWER PLANTS,  
ECONOMICS); (\*POWER PLANTS(ESTABLISHMENTS),  
COSTS); DAMS; FEASIBILITY STUDIES; SITE  
SELECTION; REACTOR FUELS; REACTOR CORES; NUCLEAR  
REACTORS; MAINTENANCE; TRANSMISSION LINES (U)

THE PURPOSE OF THIS PAPER IS TO PRESENT NEW  
CALCULATIONS INCORPORATING REVISED COST ESTIMATES OF  
THE NUCLEAR POWERPLANT ALTERNATIVES AND REFLECTING  
THE INCREASED IMPORTANCE OF ONE OF THE PROPOSED DAMS,  
THE HUALAPAI (FORMERLY BRIDGE CANYON)  
PROJECT. THE NEW CALCULATIONS ALSO INTRODUCE  
SEVERAL REFINEMENTS ON EARLIER METHODS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 807 18/5 10/2  
RAND CORP SANTA MONICA CALIF  
WHAT THE PARSONS STUDY REALLY SAYS ABOUT NUCLEAR  
POWER ECONOMICS: THE GRAND CANYON CONTROVERSY,  
ROUND,  
MAR 67 27P HOFHN, WILLIAM E. ;  
REPT. NO. P-3548

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-648 806.

DESCRIPTORS: (\*NUCLEAR POWER PLANTS,  
ECONOMICS), (\*POWER PLANTS (ESTABLISHMENTS),  
COSTS), NUCLEAR ENERGY, DAMS, CONSTRUCTION,  
RECLAMATION, REACTOR FUELS, SITE SELECTION,  
DESALINATION, DISTILLING PLANTS, REACTOR CORES,  
FUEL BURN UP, TRANSMISSION LINES

(U)

THE PRINCIPAL CONCLUSIONS OF THE PARSONS STUDY  
ARE: (1) COMPARING NUCLEAR ALTERNATIVES WITH  
THE HYDROELECTRIC PLANTS ON A PEAKING BASIS SHOWS  
THAT THE NUCLEAR PLANTS THEMSELVES WILL NEVER PAY OUT  
SINCE THE ANNUAL INTEREST PAYMENTS ARE GREATER THAN  
THE NET REVENUES AS DEMONSTRATED IN THE  
CONSOLIDATED PAYOUT SCHEDULES HEREIN. (2)  
THIS STUDY ALSO COMPARES THE FUNDS ACCUMULATION  
FROM A BASE-LOADED NUCLEAR PLANT WITH THOSE  
ACCUMULATED FROM THE HYDROELECTRIC PLANTS. WHILE  
THIS COMPARISON ACCRUES THE MOST FUNDS FROM THE  
VARIOUS NUCLEAR ALTERNATIVES CONSIDERED IN THIS  
STUDY, THE FUNDS ACCUMULATED ARE SUBSTANTIALLY LESS  
THAN THOSE ACCUMULATED FROM THE HYDROELECTRIC PLANTS.  
(3) EVEN AT THE FEDERAL FINANCING INTEREST RATE  
OF 3.222%, THE BASELOADED NUCLEAR POWER PLANTS  
COULD NOT REPAY THEIR COSTS IF IT WERE NOT FOR THE  
OUTSIDE CONTRIBUTIONS TO THE COMBINED FUND OF  
REVENUES FROM HOOVER, PARKER, AND DAVIS DAMS  
IN LATER YEARS OF THE ANALYSIS. (4) EVALUATING  
ONLY THE ECONOMICS OF NUCLEAR ENERGY PRODUCTION AT  
THE PLANTS -- BY NEGLECTING ALL TRANSMISSION COSTS --  
THE FOUR NUCLEAR PLANTS, BASELOADED, COULD NOT REPAY  
THEIR COSTS IF THE AGGREGATE FIXED CHARGE RATE  
(INCLUDING DEPRECIATION) WERE IN EXCESS OF 6.1%  
PER ANNUM.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-649 372 13/10 5/9

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP: THE SS PRESIDENT ARTHUR, A DRY  
CARGO SHIP IN THE TRANS-PACIFIC SERVICE. (U)

FEB 67 42P

CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-649 387.

DESCRIPTORS: (\*CARGO SHIPS, \*MANPOWER STUDIES),  
SYSTEMS ENGINEERING, COST EFFECTIVENESS,  
OPERATIONS RESEARCH, MANAGEMENT PLANNING, DATA  
PROCESSING SYSTEMS, INFORMATION RETRIEVAL,  
MERCHANT VESSELS, SHIPPING(MARINE),  
FUNCTIONAL ANALYSIS (U)

THE REPORT DETAILS THE RESULTS OF SYSTEMS ANALYSIS  
WORK ABOARD TWENTY (20) DIFFERENT MERCHANT SHIPS.  
IT PRESENTS INFORMATION RELATING TO ONE OF THESE  
SHIPS. THE REPORT ALSO DESCRIBES A SYSTEM FOR THE  
RETRIEVAL AND ANALYSIS OF DATA REQUIRED FOR THE  
EFFECTIVE MANAGEMENT OF A SHIP. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-649 387 13/10 5/9  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS, A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP: THE SS BAYOU STATE, A DRY CARGO  
SHIP IN THE GULF COAST - FAR EAST SERVICE. (U)  
FEB 67 40P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-649 372.

DESCRIPTORS: (\*CARGO SHIPS, \*MANPOWER STUDIES),  
SYSTEMS ENGINEERING, COST EFFECTIVENESS,  
OPERATIONS RESEARCH, MANAGEMENT PLANNING, DATA  
PROCESSING SYSTEMS, INFORMATION RETRIEVAL,  
MERCHANT VESSELS, FUNCTIONAL ANALYSIS,  
SHIPPING(MARINE) (U)

THE REPORT DETAILS THE RESULTS OF SYSTEMS ANALYSIS  
WORK ABOARD TWENTY (20) DIFFERENT MERCHANT SHIPS.  
IT PRESENTS INFORMATION RELATING TO ONE OF THESE  
SHIPS. THE REPORT ALSO DESCRIBES A SYSTEM FOR THE  
RETRIEVAL AND ANALYSIS OF DATA REQUIRED FOR THE  
EFFECTIVE MANAGEMENT OF A SHIP. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-649 849 5/3

YALE UNIV NEW HAVEN CONN COWLES FOUNDATION FOR RESEARCH  
IN ECONOMICS

MATHEMATICAL STRUCTURE AND ANALYSIS OF THE  
NONSYMMETRIC GAME. PART IV. (U)

MAR 67 42P LEVITAN, RICHARD I

SHUBIK, MARTIN I

REPT. NO. COWLES DISCUSSION PAPER-219

CONTRACT: NONR-3055(U0)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH IBM  
WATSON RESEARCH CENTER, YORKTOWN HEIGHTS, N.  
Y.

DESCRIPTORS: (\*GAME THEORY, ECONOMICS),  
(\*ECONOMICS, MATHEMATICAL MODELS), EQUATIONS,  
COMMERCE, MATHEMATICAL ANALYSIS, COSTS,  
BUDGETS, INDUSTRIES, MONEY (U)

THE PRIME CONCERN OF THE PAPER WAS THE FORMULATION  
AND EXPLORATION OF AN EXPLICIT MATHEMATICAL MODEL OF  
A NONSYMMETRIC OLIGOPOLISTIC MARKET. THERE ARE  
MANY DIFFERENT CONCEPTS OF 'SOLUTION' WHICH MAY BE  
APPLIED TO SUCH A STRUCTURE. IT IS BELIEVED THAT  
(AT LEAST BASED UPON EXPERIENCE WITH OLIGOPOLY  
GAMES) THE NONCOOPERATIVE EQUILIBRIUM SOLUTION IS  
THE BEST SHORT TERM PREDICTOR OF BEHAVIOR. IT WAS  
OBSERVED THAT BY MAKING BOTH BEHAVIORAL  
(NONCOOPERATIVE EQUILIBRIUM) AND STRUCTURAL  
(THE QUADRATIC PAYOFF FUNCTIONS) ASSUMPTIONS,  
PARAMETERS COULD BE ESTIMATED FROM CORPORATE AND  
OTHER MARKET INFORMATION. A GAME WAS PRODUCED WITH  
PARAMETERS THAT LOOK 'SOMEWHAT LIKE' AN ACTUAL  
INDUSTRY AND HAS THE PROPERTY THAT THE NONCOOPERATIVE  
SOLUTION GIVES THE PROFITS, SALES AND PRICES OF THAT  
INDUSTRY AT A POINT IN TIME. THE ASSUMPTIONS OF A  
LINEAR AGGREGATE DEMAND FUNCTION AND OF CONSTANT  
AVERAGE COSTS WITH CAPACITY LIMITATIONS LEAD, IN THE  
SYMMETRIC CASE, TO QUADRATIC PAYOFF FUNCTIONS FOR THE  
FIRMS AND IN THE NONSYMMETRIC CASE TO THE MODEL  
FORMULATED. GIVEN THE DIFFICULTIES IN  
MICROECONOMIC MEASUREMENT AND THE COMPLEXITY OF EVEN  
HIGHLY SIMPLIFIED N-FIRM MARKET MODELS THE DETAILED  
EXPLORATION OF SOLUTIONS OF MODELS WITH MORE COMPLEX  
DEMAND OR COST FUNCTIONS DOES NOT APPEAR TO BE  
MERITED AT THIS TIME. IT IS NOT EVIDENT THAT ANY  
QUALITATIVELY DIFFERENT PHENOMENA WILL BE ENCOUNTERED  
BY USING QUADRATIC OR HIGHER APPROXIMATIONS FOR  
DEMAND OR COST CONDITIONS. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 129 14/1 12/2 5/1  
RAND CORP SANTA MONICA CALIF  
COST-EFFECTIVENESS: SOME TRENDS IN ANALYSIS, (U)  
MAR 67 19P QUADE, E. S. I  
REPT. NO. P-3529

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION DURING THE  
COURSE, 'COST EFFECTIVENESS-THE ECONOMIC  
EVALUATION OF ENGINEERED SYSTEMS', HELD AT THE  
CALIFORNIA UNIV., LOS ANGELES, 27-31 MAR 67.

DESCRIPTORS: (\*COST EFFECTIVENESS, SYSTEMS  
ENGINEERING), (\*MAN-MACHINE SYSTEMS,  
COMPUTERS), DECISION MAKING, GAME THEORY,  
INTERACTIONS, PREDICTIONS, OPERATIONS RESEARCH,  
MATHEMATICAL ANALYSIS (U)

COST-EFFECTIVENESS ANALYSIS IS NOT A STATIC CRAFT;  
WHILE IT STILL MAY BE MORE AN ART THAN A SCIENCE, ITS  
PRACTITIONERS ARE CONSTANTLY STRIVING TO WIDEN ITS  
AREA OF APPLICATION AND TO IMPROVE IT BY INTRODUCING  
BETTER METHODS OF ANALYSIS. NEW APPROACHES AND  
TECHNIQUES ARE BEING PROPOSED CONSTANTLY. MOST OF  
THESE ARE PRIMARILY MATHEMATICAL IN NATURE, BUT A FEW  
ARE DIRECTED TOWARD A BETTER TREATMENT OF THOSE  
ASPECTS OF ITS PROBLEMS THAT CANNOT BE HANDLED BY  
PURELY QUANTITATIVE METHODS. EMPHASIS IN THIS  
PAPER WILL BE ON THE LATTER. THE AUTHOR DOES NOT  
ATTEMPT TO BE COMPREHENSIVE BUT MERELY NOTES THREE  
TRENDS INVOLVING, RESPECTIVELY: COMPUTERS,  
MATHEMATICS, AND THE DIRECT USE OF EXPERTISE. THE  
AUTHOR DISCUSSES THE FIRST TWO ONLY BRIEFLY, BUT  
DESCRIBES THE LAST IN SOME DETAIL. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 253 14/1 5/1  
MITRE CORP BEDFORD MASS  
A COST DATA RESEARCH PROGRAM PROPOSAL WITH SPECIAL  
EMPHASIS ON A TECHNICAL CHARACTERISTICS DICTIONARY, (U)  
MAR 67 31P JONES, M. V. ;  
REPT. NO. MTR-266  
CONTRACT: AF 19(628)-5165  
PROJ: AF-1820  
MONITOR: ESD TR-67-69

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COSTS, \*MANAGEMENT ENGINEERING),  
(\*OPERATIONS RESEARCH, \*AIR FORCE), DATA  
PROCESSING SYSTEMS, ACCURACY, EQUATIONS, SPARE  
PARTS, LOGISTICS, SYSTEMS ENGINEERING, COST  
EFFECTIVENESS (U)

THIS REPORT DESCRIBES A COMPREHENSIVE PROGRAM OF  
COST DATA RESEARCH PROPOSED FOR IMPROVING THE  
CREDIBILITY AND ACCURACY OF FUTURE COST ESTIMATES FOR  
AIR FORCE SYSTEMS. (U)

UNCLASSIFIED

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 328 9/5 20/14  
NAVY ELECTRONICS LAB SAN DIEGO CALIF  
A NUMERICAL ANALYSIS OF HF EXTENDED-SECTOR GROUND  
SYSTEMS. (U)  
DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT., NOV  
65-MAY 66,  
JAN 67 54P HORN, J. M. ;  
REPT. NO. NEL-1430  
PROJ: SF-006-03-05  
TASK: 7916 (NEL B14571)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ANTENNA RADIATION PATTERNS, HIGH  
FREQUENCY), (\*ANTENNA COMPONENTS,  
GROUND(ELECTRICAL)),  
PERFORMANCE(ENGINEERING), NUMERICAL ANALYSIS,  
ANTENNAS, WIRE, ELECTROMAGNETIC PROPERTIES,  
NETS, COST EFFECTIVENESS, COMPUTER PROGRAMS (U)

IN AN EFFORT TO DETERMINE SHORE ANTENNA  
REQUIREMENTS, ENHANCED, LOW-ANGLE, VERTICALLY  
POLARIZED RADIATION WAS STUDIED BY GREATLY EXTENDED  
GROUND PLANES, AND A NUMERICAL ANALYSIS CONDUCTED.  
IT WAS FOUND THAT (1) THE MODIFIED RADIAL  
GROUND SYSTEM IS SUPERIOR TO MESH GROUND SYSTEMS; AND  
(2) THE RESULTS SHOULD BE APPLIED TO INDIVIDUAL  
DESIGNS ON A COST EFFECTIVENESS BASIS.  
(AUTHOR) (U)

UNCLASSIFIED

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 502 5/1 9/2  
RAND CORP SANTA MONICA CALIF  
MANPOWER REQUIREMENTS PREDICTION AND ALLOCATION FOR  
UNSCHEDULED MAINTENANCE ON AIRCRAFT, (U)  
FEB 67 64P KIVIAT, P. J. ;  
REPT. NO. RM-5215-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANPOWER, \*MATHEMATICAL  
PREDICTION), AIRCRAFT, MAINTENANCE, COSTS,  
COMPUTERS, SIMULATION, EFFECTIVENESS (U)

A STATISTICAL MODEL FOR PREDICTING, BY SHOP AND  
SKILL LEVEL, MAN-HOUR DEMANDS FOR UNSCHEDULED  
MAINTENANCE ON AIRCRAFT. THE MANPOWER PREDICTION  
TECHNIQUE AND MANPOWER ALLOCATION MODEL ARE  
DESCRIBED. THE PREDICTION TECHNIQUE ESTIMATES  
FUTURE MANPOWER REQUIREMENTS BY INTEGRATING  
STATISTICAL ESTIMATES OF AIRCRAFT REPAIR  
CHARACTERISTICS AND PROJECTED AIRCRAFT FLYING  
PROGRAMS. THE ALLOCATION MODEL TAKES A SYSTEMS  
APPROACH TO MANPOWER DISTRIBUTION, USING THE  
PREDICTED DEMANDS ALONG WITH MANPOWER COST AND  
EFFECTIVENESS DATA TO MATCH A BASE'S SHOP MANNING  
WITH ITS PROJECTED FLYING PROGRAM. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 560 1/3 5/1 9/2  
RAND CORP SANTA MONICA CALIF  
DAPCA: A COMPUTER PROGRAM FOR DETERMINING AIRCRAFT  
DEVELOPMENT AND PRODUCTION COSTS. (U)  
FEB 67 89P BOREN, H. E. , JR!  
REPT. NO. RM-5221-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT, COSTS), (\*COSTS,  
\*COMPUTER PROGRAMS), PRODUCTION, AIRFRAMES,  
AIRCRAFT ENGINES, SUBROUTINES, MATHEMATICAL  
PREDICTION (U)  
IDENTIFIERS: DAPCA (U)

THE MEMORANDUM PRESENTS A DESCRIPTION OF A COMPUTER  
PROGRAM (DAPCA) DEVELOPED TO COMPUTE DEVELOPMENT  
AND PRODUCTION COSTS FOR THE MAJOR SUBSYSTEMS  
(I.E., AIRFRAMES, ENGINES, AND AVIONICS) OF  
FLYAWAY AIRCRAFT. THIS PROGRAM IS BASED ON THE  
METHODOLOGIES DESCRIBED IN RM-4585-PR, RM-4670-  
PR (ABRIDGED) (AD-624 094), AND RM-4851-  
PR (ABRIDGED) (AD-633 636). (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 325 13/10 5/9

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIP BOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. THE SS SHELDON LYKES: A DRY CARGO  
SHIP IN THE SOUTH ATLANTIC SERVICE. (U)

MAR 67 36P

CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CARGO SHIPS; \*MANPOWER STUDIES);  
(\*MERCHANT VESSELS; SYSTEMS ENGINEERING);  
COSTS; FUNCTIONAL ANALYSIS; INFORMATION  
RETRIEVAL; JOB ANALYSIS; MANAGEMENT ENGINEERING;  
MANPOWER (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS  
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY (20)  
DIFFERENT MERCHANT SHIPS. IT PRESENTS INFORMATION  
RELATING TO ONE OF THESE SHIPS. THE REPORT ALSO  
DESCRIBES A SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF  
DATA REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.  
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 764 13/3 14/1  
GENERAL MOTORS CORP CLEVELAND OHIO ALLISON DIV  
A STUDY TO DETERMINE THE FEASIBILITY OF DEFINING  
EARTHMOVING VEHICLE SYSTEMS BY ANALYTICAL TECHNIQUES(U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
APR 67 179P JAGUISH, P. E. IERICKSON, G.  
B. JOBARIS, J. E. I  
CONTRACT: DA-44-009-AMC-1593(T)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EARTH-HANDLING EQUIPMENT, SYSTEMS  
ENGINEERING), FEASIBILITY STUDIES, VEHICLES,  
COST EFFECTIVENESS, COMPUTER PROGRAMS, DESIGN,  
CONSTRUCTION (U)

THE FEASIBILITY OF DEFINING EARTHMOVING VEHICLE  
SYSTEMS BY ANALYTICAL TECHNIQUES WAS DEMONSTRATED.  
THE BASIC METHODOLOGY AND SKELETAL COMPUTER PROGRAM  
WAS DEVELOPED TO DETERMINE THE COST/EFFECTIVENESS  
ADVANTAGES OF SPECIAL EQUIPMENT SYSTEMS SUCH AS THOSE  
CONSISTING OF MULTIPURPOSE, MULTIFUNCTION VEHICLES.  
THE COMPUTER PROGRAM DEVELOPED HAS VERIFIED THE  
ANALYTICAL APPROACH BY STRUCTURING A HYPOTHETICAL  
VEHICLE SYSTEM WHOSE COST FOR PERFORMING A SPECIFIC  
AIRFIELD CONSTRUCTION WAS SUBSTANTIALLY LESS THAN THE  
COST INCURRED BY EACH OF THREE SPECIFIED ENGINEER  
COMBAT BATTALIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 843 13/10 5/9  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. SS CITIES SERVICE BALTIMORE: A  
TANKER IN THE ATLANTIC COASTAL SERVICE. (U)  
MAR 67 35P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TANKERS, \*MANPOWER STUDIES),  
(\*MERCHANT VESSELS, SYSTEMS ENGINEERING),  
COSTS, FUNCTIONAL ANALYSIS, INFORMATION  
RETRIEVAL, MANPOWER, DECISION MAKING, MANAGEMENT  
ENGINEERING (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS  
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY (20)  
DIFFERENT MERCHANT SHIPS. IT PRESENTS INFORMATION  
RELATING TO ONE OF THESE SHIPS. THE REPORT ALSO  
DESCRIBES A SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF  
DATA REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 933 5/9 14/1  
NAVAL PERSONNEL RESEARCH ACTIVITY SAN DIEGO CALIF  
QUANTIFICATION OF PERSONNEL PERFORMANCE FOR COST  
EFFECTIVENESS DECISIONS: I. AN ANNOTATED  
BIBLIOGRAPHY. (U)

DESCRIPTIVE NOTE: RESEARCH MEMO.,  
APR 67 68P WILLIS, JOE E. IDOW, ANDREW  
N. 1  
REPT. NO. SRM-67-15  
PROJ: PF-016020801

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL PERSONNEL,  
PERFORMANCE(HUMAN)), (\*COST EFFECTIVENESS,  
SYSTEMS ENGINEERING), BIBLIOGRAPHIES,  
PREDICTIONS, EFFECTIVENESS, RELIABILITY,  
MANPOWER (U)

AS THE FIRST PHASE OF A PROJECT TO DEVELOP A METHOD  
OF PREDICTING PERSONNEL PERFORMANCE EFFECTIVENESS, A  
SEARCH OF THE LITERATURE WAS MADE. QUOTES, NOTES,  
AND COMMENTS FOR THE USE OF THE RESEARCH TEAM WERE  
MADE FOR EACH ARTICLE. FROM THE MATERIALS  
ASSEMBLED, 115 ITEMS WERE SELECTED FOR AN ANNOTATED  
BIBLIOGRAPHY COVERING FIVE AREAS: (1)  
PERSONNEL PERFORMANCE EFFECTIVENESS MEASUREMENT,  
(2) PERSONNEL PERFORMANCE EFFECTIVENESS  
PREDICTION, (3) HUMAN RELIABILITY IN SYSTEMS,  
(4) PERSONNEL PERFORMANCE DATA UTILIZATION  
PROBLEMS, AND (5) FUNCTION ALLOCATION. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 167 15/3

PITTSBURGH UNIV PA DEPT OF SOCIOLOGY  
COST AND FINANCING OF CIVIL DEFENSE: SOME PUBLIC  
VIEWS.

(U)

FEB 67 77P COLEMAN, ALAN N. ;  
CONTRACT: DAHC20-67-C-0122, NSF 611309

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CIVIL DEFENSE SYSTEMS,  
ECONOMICS), COSTS, FALLOUT SHELTERS, PUBLIC  
OPINION

(U)

THE REPORT ATTEMPTS TO BRING TOGETHER, FROM A  
NUMBER OF NATIONAL AND COMMUNITY STUDIES, THE RESULTS  
REGARDING THE AMERICAN PUBLIC'S VIEWS ON THE COST  
AND FINANCING OF CIVIL DEFENSE MEASURES AND PROGRAMS.  
GIVEN THE LIMITATIONS IMPOSED BY THE NUMBER AND  
DIVERSITY OF THE STUDIES USED, THE FOLLOWING  
GENERALIZATIONS OBTAINED: (1) INCREASING CIVIL  
DEFENSE EXPENDITURES IN GENERAL IS BELIEVED  
DESIRABLE; (2) MANY CITIZENS ARE UNCERTAIN ABOUT  
WHAT FALLOUT PROTECTION SHOULD COST; (3) PERSONAL  
ASSUMPTION OF THE TOTAL OR EVEN PARTIAL COST FOR  
FAMILY SHELTERS IS NOT FAVORED; (4) MAJOR  
OBJECTIONS TO FAMILY FALLOUT SHELTERS INVOLVE COST;  
(5) FAVORABILITY OF PUBLIC AS WELL AS FAMILY  
FALLOUT SHELTERS IS INCREASED WHEN FEDERAL OR STATE  
FINANCIAL ASSISTANCE IS INCLUDED; (6) A  
SUBSTANTIAL PORTION OF THE CITIZENRY FAVORS A TAX  
REDUCTION OR EXEMPTION FOR SHELTERS; (7) INDIRECT  
INDUCEMENTS FOR BUILDING SHELTERS GENERALLY MEET THE  
APPROVAL OF THE PUBLIC; (8) SPECIFIED ALTERNATIVE  
METHODS OF FINANCING SHELTERS HAVE BEEN MET WITH  
DISAPPROVAL OR UNCERTAINTY; (9) PUBLIC SHELTERS  
ARE VIEWED AS EFFECTIVE AND WORTH THE COST; (10)  
AMONG ALTERNATIVE PROGRAMS, EDUCATION AND HEALTH RANK  
AHEAD OF CIVIL DEFENSE MEASURES, AND VERY FEW PEOPLE  
CURRENTLY AGREE THAT CIVIL DEFENSE MONIES WOULD BE  
BETTER SPENT ON MISSILES AND BOMBERS. THE MAJORITY  
OF THE STUDIES UTILIZED WERE CONDUCTED IN THE EARLY  
1960'S--A TIME WHEN THE FAMILY SHELTER CONTROVERSY  
REACHED IT APEX. GENERAL COST AND FINANCING ISSUES  
AND ALTERNATIVES HAVE NOT BEEN PROBED EXTENSIVELY IN  
NATIONAL AND COMMUNITY SURVEYS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 481 13/10 5/9 14/1 15/5  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. SS DEL MUNDO. A DRY CARGO SHIP IN  
THE SOUTH AMERICAN SERVICE. SS DEL ORO. A DRY CARGO  
SHIP IN THE AFRICAN SERVICE. (U)  
MAR 67 51P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-649 387.

DESCRIPTORS: (\*CARGO SHIPS, \*ANALYSIS),  
(\*MANPOWER STUDIES, \*DATA PROCESSING SYSTEMS),  
COSTS, MANPOWER, INFORMATION RETRIEVAL,  
MERCHANT VESSELS, DATA STORAGE SYSTEMS, SHIP  
AUXILIARY EQUIPMENT, LABOR, WAGES, TABLES,  
COMPUTERS, SYSTEMS ENGINEERING, EFFECTIVENESS,  
AFRICA, AUTOMATION, SOUTH AMERICA (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS  
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY DIFFERENT  
MERCHANT SHIPS. IT PRESENTS INFORMATION RELATING  
TO TWO OF THESE SHIPS. THE REPORT ALSO DESCRIBES A  
SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF DATA  
REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 482 13/10 5/9 14/1 15/5  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. SS GLOBE CARRIER. A BULK CARRIER  
IN THE TRANS-ATLANTIC SERVICE. ST OCEAN ANNA. A  
TANKER IN THE PACIFIC-COASTAL SERVICE. (U)  
MAR 67 53P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-651 481.

DESCRIPTORS: (\*CARGO SHIPS, \*ANALYSIS),  
(\*MANPOWER STUDIES, \*DATA PROCESSING SYSTEMS),  
MANPOWER, COSTS, MANAGEMENT ENGINEERING,  
INFORMATION RETRIEVAL, MERCHANT VESSELS, LABOR,  
DATA STORAGE SYSTEMS, SHIP AUXILIARY EQUIPMENT,  
TABLES, COMPUTERS, SYSTEMS ENGINEERING,  
EFFECTIVENESS, AUTOMATION, PACIFIC OCEAN (U)

THE REPORT IS ONE OF A SERIES DETAILING THE RESULTS  
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY DIFFERENT  
MERCHANT SHIPS. IT PRESENTS INFORMATION RELATING  
TO TWO OF THESE SHIPS. THE REPORT ALSO DESCRIBES A  
SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF DATA  
REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 486 5/2 14/1  
ARMY ENGINEER RESEARCH AND DEVELOPMENT LABS FORT BELVOIR  
VA TECHNICAL INFORMATION AND LIBRARY BRANCH  
AN APPROACH TO COST EFFECTIVENESS OF A SELECTIVE  
MECHANIZED DOCUMENT PROCESSING SYSTEM, (U)  
MAR 67 73P SEGARRA, CARLOS O. ;  
MONITOR: ATLIS 12

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TECHNICAL INFORMATION CENTERS,  
AUTOMATION), (\*DATA PROCESSING SYSTEMS, COST  
EFFECTIVENESS), SELECTION, LIBRARIES, REPORTS,  
DOCUMENTATION, SYSTEMS ENGINEERING, PUNCHED  
CARDS (U)

THE PURPOSE OF THE PROJECT WAS TO IDENTIFY AND  
DEFINE THE PARAMETERS OF AN ECONOMICAL AND PRACTICAL  
INFORMATION SYSTEM FOR THE U. S. ARMY  
ENGINEER RESEARCH AND DEVELOPMENT  
LABORATORIES. THE PROGRAM INCLUDED FOUR  
PHASES: DATA REQUIREMENTS DEFINITION; COST  
ANALYSIS AND SYSTEM DEFINITION; HARDWARE SELECTION;  
SYSTEM TEST AND EVALUATION; AND DEVELOPMENT OF  
SOFTWARE. THE METHOD OF APPROACH FOR EACH PHASE IS  
GIVEN, AND THE PROCEDURES USED AND DECISION CRITERIA  
DEVELOPED ARE DISCUSSED. RESULTS OF DECISION TO  
MECHANIZE OPERATIONS IN THE INFORMATION CENTER LEAD  
TO THE SELECTION AND INSTALLATION OF FOUR MACHINES.  
ALL COMPONENTS OF THE IBM 870 DOCUMENT WRITING  
SYSTEM, WITHIN A RENTAL BUDGET OF \$7,000 PER  
YEAR. RESULTS OF MECHANIZING, AFTER OPERATION FOR  
ONE YEAR, INCLUDED: REDUCED PROCESSING COSTS BY  
REJECTING REPORTS HAVING NO RELEVANCY TO ON-GOING  
TASKS; ELIMINATED THE NEED FOR OVERTIME REQUIRED  
UNDER MANUAL CONDITIONS; REDUCED ACTUAL PROCESSING  
COSTS OF DOCUMENTS; REDUCED PROCESSING TIME PER  
REPORT FROM 75 DAYS TO 5 DAYS; AND RELIEVED STAFF OF  
ROUTINE CLERICAL WORKLOADS, THEREBY EXTENDING THEIR  
CAPACITY TO OPTIMIZE OTHER INFORMATION FUNCTIONS.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 531 15/5 21/4  
AIR FORCE LOGISTICS COMMAND WRIGHT-PATTERSON AFB OHIO  
LOGISTICS SIMULATION CENTER  
BID EVALUATION FOR PROCUREMENT OF AVIATION FUEL AT  
DFSC: A CASE HISTORY, (U)  
MAR 67 16P \*AGGENER, HERMAN A. ;  
SUZUKI, GEORGE ;

UNCLASSIFIED REPORT  
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH  
LOGISTICS QUARTERLY V14 N1 P115-29 MAR 1967.  
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH NAVY  
MANAGEMENT OFFICE.

DESCRIPTORS: (\*AVIATION FUELS, \*ARMED FORCES  
PROCUREMENT), JET ENGINE FUELS, COSTS,  
COMPUTERS, COST EFFECTIVENESS, SYSTEMS  
ENGINEERING (U)  
IDENTIFIERS: BIDDING, EVALUATION (U)

THE COMPUTER SYSTEM FOR BID EVALUATION HAS PROVEN  
SUCCESSFUL AND IS USED OPERATIONALLY BY DFSC  
BUYERS. IT REDUCED OVERTIME ENOUGH TO PAY FOR  
ITSELF AND HAS PROVIDED BENEFITS AND CAPABILITIES  
NEVER BEFORE POSSIBLE. NOT THE LEAST OF THESE IS  
ASSURANCE OF A MINIMUM COST AWARD PATTERN WITH NEARLY  
ALL CALCULATIONS MADE FOR THE BUYERS. IT DOES NOT  
REPLACE THE EXPERIENCE, JUDGEMENT AND PERCEPTION OF  
THE BUYERS, BUT IT PROVIDES THEM WITH THE MOST  
SCIENTIFIC TOOL YET AVAILABLE TO SOLVE AN EXTREMELY  
COMPLEX PROBLEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 533 12/2  
MICHIGAN UNIV ANN ARBOR  
A QUEUEING PROCESS WITH BILEVEL HYSTERETIC SERVICE-  
RATE CONTROL, (U)  
67 14P GERHARD, RICHARD J

UNCLASSIFIED REPORT  
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH  
LOGISTICS QUARTERLY V14 N1 P55-67 MAR 1967.

DESCRIPTORS: (\*QUEUEING THEORY, CONTROL);  
THEORY, MATHEMATICAL MODELS, PROBABILITY,  
COSTS (U)

THE PURPOSE OF THIS PAPER IS TO ANALYZE THE EFFECT  
OF A PARTICULAR CONTROL DOCTRINE APPLIED TO THE  
SERVICE MECHANISM OF A QUEUEING PROCESS. A BILEVEL  
HYSTERETIC CONTROL BASED ON QUEUE LENGTH CONTROL  
LEVELS IS EMPLOYED IN AN M/M/1 QUEUEING SYSTEM.  
EXPRESSIONS ARE OBTAINED FOR QUEUE LENGTH  
PROBABILITIES, THE FIRST TWO FACTORIAL MOMENTS OF  
QUEUE LENGTH AND TWO FIGURES OF MERIT FOR DESCRIBING  
CONTROL PERFORMANCE UNDER THE ASSUMPTION OF  
STATISTICAL EQUILIBRIUM. COMPUTATIONAL EXAMPLES  
ILLUSTRATE THE EFFECTS ON QUEUEING PROCESSES SUBJECT  
TO THIS TYPE OF CONTROL. SEVERAL COST FORMULAE ARE  
CONSIDERED FOR COMPARISON OF COSTS WHEN THE QUEUE  
CONTROL DOCTRINE IS VARIED. SITUATIONS IN WHICH  
HYSTERETIC CONTROL IS USEFUL ARE DISCUSSED.  
(AUTHOR) (U)

UNCLASSIFIED



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 546 13/10 5/9 14/1 15/5  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. THE SS SONOMA. A DRY CARGO SHIP  
IN THE SOUTH PACIFIC SERVICE. (U)  
MAR 67 38P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-651 482.

DESCRIPTORS: (\*CARGO SHIPS; \*ANALYSIS),  
(\*MANPOWER STUDIES; \*DATA PROCESSING SYSTEMS),  
MANPOWER; COSTS; INFORMATION RETRIEVAL;  
MERCHANT VESSELS; LABOR; WAGES; DATA STORAGE  
SYSTEMS; SHIP AUXILIARY EQUIPMENT; TABLES;  
COMPUTERS; SYSTEMS ENGINEERING; EFFECTIVENESS;  
AUTOMATION; SOUTHERN HEMISPHERE; PACIFIC  
OCEAN (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS  
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY DIFFERENT  
MERCHANT SHIPS. IT PRESENTS INFORMATION RELATING  
TO ONE OF THESE SHIPS. THE REPORT ALSO DESCRIBES A  
SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF DATA  
REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 766 6/5  
RAND CORP SANTA MONICA CALIF  
SOCIAL COST OF PEPTIC ULCER, (U)  
APR 67 25P BLUMENTHAL-I.  
REPT. NO. P-3588

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE  
CONFERENCE ON DIGESTIVE DISEASE AS A NATIONAL  
PROBLEM, BETHESDA, MD., FEB 5-7 1967.

DESCRIPTORS: (\*ULCERS; PUBLIC HEALTH);  
MORTALITY RATES; POPULATION; ECONOMICS;  
BIOMETRY; DIGESTIVE SYSTEM DISEASES; STATISTICAL  
DATA (U)

CONTENTS: DEATHS DUE TO PEPTIC ULCER;  
PREVALENCE OF PEPTIC ULCER; ECONOMIC COSTS OF  
PEPTIC ULCER; THE CONCEPT; LOSS DUE TO DISABILITY;  
LOSS DUE TO DEATH; COSTS OF MEDICAL CARE; THE TOTAL  
ECONOMIC COST; SOME RESULTS FROM RECENT STUDIES ON  
THE ECONOMIC COSTS OF ILLNESS. (U)

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DGC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 483 5/9 14/1  
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C  
PERSONNEL RESEARCH LAB  
PROPOSED CONTENT OF AN OFFICER PERSONNEL COST  
MODEL, (U)  
APR 67 41P GETTINGS, ROY W. I  
REPT. NO. WRM-67-31  
PROJ: PF016010 02

UNCLASSIFIED REPORT

DESCRIPTORS: (\*OFFICER PERSONNEL; \*COSTS);  
ANALYSIS; TRAINING; WAGES; TRANSPORTATION;  
PROCUREMENT; NAVAL PERSONNEL; REPORTS;  
COMPUTERS; DATA PROCESSING SYSTEMS;  
EFFECTIVENESS (U)

THE REPORT PRESENTS AN OUTLINE OF A PROPOSED  
OFFICER PERSONNEL COST MODEL. THE NEED TO  
DEVELOP SUCH A COMPUTERIZED COST MODEL HAS BECOME  
EVIDENT WITH THE INCREASING NUMBER OF REQUESTS FOR  
COST DATA FROM A WIDE VARIETY OF NAVY AND  
DEPARTMENT OF DEFENSE OFFICES. THE SECRETARY  
OF DEFENSE HAS, ACCORDINGLY, DESIGNATED THE  
SECRETARY OF THE NAVY TO DEVELOP THE COST MODEL  
TO BE USED IN DESIGN TRADE-OFFS. THE APPROACH HAS  
INVOLVED AN ANALYSIS OF THE PRESENT OFFICER  
PERSONNEL COST SYSTEM IN TERMS OF INPUT, PROCESSING,  
AND OUTPUT. REVISED OUTPUTS HAVE BEEN DESIGNED TO  
PROVIDE CONCISE REPORTS OF INFORMATION FREQUENTLY  
REQUIRED. MODIFICATION TO PRESENT REPORTING  
SYSTEMS AND DEVELOPMENT OF NEW REPORTING SYSTEMS WILL  
BE REQUIRED FOR THE IMPLEMENTATION OF THE PROPOSED  
MODEL. SOME RECOMMENDATIONS ARE MADE FOR AREAS OF  
FUTURE RESEARCH. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 198 15/5 5/3 12/2  
RAND CORP SANTA MONICA CALIF  
ON THE SEPARATION OF PRODUCTION FROM THE  
DEVELOPER;  
MAY 67 23P ARDITTI, FRED D. I  
REPT. NO. P-3542-1

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ARMED FORCES PROCUREMENT,  
COSTS); (\*MATHEMATICAL MODELS, \*COSTS);  
INDUSTRIAL PRODUCTION, ECONOMICS, DECISION  
THEORY, MANAGEMENT ENGINEERING

(U)

THE PAPER IS AN ATTEMPT TO PRESENT AND TEST A MODEL  
WHICH ALLOWS ONE TO ESTIMATE THE COSTS OF  
TRANSFERRING PRODUCTION FROM THE DEVELOPER TO SOME  
OTHER PRODUCER AND THE OPTIMAL TIME FOR THIS  
SEPARATION.

(U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 231 5/1 14/1 15/3  
STANFORD RESEARCH INST MENLO PARK CALIF  
THE STRUCTURE AND DYNAMICS OF RESEARCH AND  
EXPLORATORY DEVELOPMENT IN DEFENSE R AND D INDUSTRY. (U)  
DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT STUDIES SERIES,  
AUG 67 50P HOWELL, RICHARD P. ;  
SHAPER, ALBERT ;  
CONTRACT: SD-158  
PROJ: SRI-IMU-4370

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 230.

DESCRIPTORS: (\*MANAGEMENT ENGINEERING, \*NATIONAL  
DEFENSE), (\*DEFENSE SYSTEMS, DYNAMICS),  
COSTS, ECONOMICS, MANPOWER, SYSTEMS  
ENGINEERING, DEPARTMENT OF DEFENSE, WAGES,  
TABLES, EMPLOYMENT, EDUCATIONS, SCIENTIFIC  
PERSONNEL, ENGINEERING PERSONNEL, PROCUREMENT,  
MONEY (U)

THE RESULTS OF THIS STUDY ARE CONSIDERED TO HAVE  
THE FOLLOWING IMPLICATIONS TO THE DEPARTMENT OF  
DEFENSE: EXPENDITURES IN DEFENSE R AND ED  
HAVE AN IMPACT, DOLLAR FOR DOLLAR, IN PROVIDING  
(A) GREATER GEOGRAPHICAL DISTRIBUTION OF  
RESOURCES THAN OTHER CATEGORIES, (B) LESS  
CONCENTRATION OF RESOURCES WITH LARGE BUSINESS,  
(C) A GREATER NUMBER OF PERFORMERS, AND (D)  
GREATER LEVELS OF EMPLOYMENT; THE MUCH SMALLER  
SIZE OF THE TYPICAL R AND ED CONTRACT AND THE  
GREATER UNCERTAINTIES ENTAILED SUGGEST THAT ONE WAY  
TO REDUCE UNCERTAINTIES IS TO AWARD MULTIPLE PARALLEL  
STUDIES, THEREBY ACHIEVING GREATER STATISTICAL  
CHANCES OF PRODUCING RESULTS WITHOUT UNDUE ADDITIONAL  
COSTS; THE INFREQUENT USE OF UNIVERSITIES AND  
NONPROFIT ORGANIZATIONS AS SUBCONTRACTORS BY  
COMMERCIAL DEFENSE CONTRACTORS RAISES A QUESTION  
CONCERNING THE ADEQUACY OF PRESENT MECHANISMS FOR  
USING THE R AND ED RESULTS THAT ARE BEING  
PRODUCED BY THE LARGE INVESTMENTS IN THESE  
CATEGORIES; THE TREND OF INCREASING EXPENDITURES  
IN THE FRACTION OF RDT&E FUNDS GOING TO R AND ED  
SUGGESTS THAT THE WORK PERFORMED IN THE POTENTIAL  
BRIDGING CATEGORIES OF EXPLORATORY DEVELOPMENT  
AND ADVANCED DEVELOPMENT BE STUDIED TO DETERMINE  
WHETHER THERE IS TRANSFER AND FULL USE OF THE RESULTS  
OF R AND ED AND WHETHER THIS SITUATION CAN BE  
IMPROVED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 458 14/1 16/1 22/2  
RAND CORP SANTA MONICA CALIF  
AUTOMATIC CHECKOUT OF SPACE SYSTEMS,  
MAY 67 17P MAST, LAWRENCE T. I  
REPT. NO. P-3603

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GROUND SUPPORT EQUIPMENT,  
\*SPACECRAFT), (\*COST EFFECTIVENESS,  
\*MANAGEMENT ENGINEERING), AUTOMATION, COSTS,  
CHECKOUT EQUIPMENT, LAUNCHING SITES, LAUNCH  
VEHICLES(AEROSPACE), PROGRAMMING(COMPUTERS),  
MAN-MACHINE SYSTEMS, INTEGRATED CIRCUITS,  
DIGITAL COMPUTERS, PERFORMANCE(ENGINEERING)

(U)

THE EXTENT OF AUTOMATION AND THE TIMING OF ITS  
INTRODUCTION IN AGE SHOULD BE THE RESULT OF COST-  
EFFECTIVENESS STUDIES. THE TEST PLAN, MAN-MACHINE  
CAPABILITIES AND LIMITATIONS, ALTERNATIVE APPROACHES,  
COSTS, AND SCHEDULE INFLUENCES SHOULD ENTER THIS  
STUDY. THE INTRODUCTION OF AUTOMATIC AGE  
INVOLVES RISKS TO THE MISSION-SUCCESS RATE OF A  
SYSTEM. MOREOVER, THE INSTALLATION AND CHECKOUT OF  
AUTOMATIC AGE IS USUALLY A TROUBLESOME, COSTLY  
PROCESS. TO MINIMIZE THESE DANGERS, A BUILDING-  
BLOCK APPROACH TO AUTOMATION OF AGE IS RECOMMENDED.  
THE FUTURE WILL REVEAL AN INCREASING USE OF  
AUTOMATION IN CHECKOUT AND OTHER LAUNCH-RELATED  
AREAS. TO ACCOMPLISH THIS, EXPLOITATION OF  
INTEGRATED CIRCUITS IN ONBOARD CHECKOUT EQUIPMENT,  
EXTENSIVE USE OF DIGITAL COMPUTATION EQUIPMENT, AND  
ADVANCES IN PROGRAMMING ARE NEEDED. INTEGRATED  
CIRCUITS WITH THEIR IMPACT ON DIGITAL EQUIPMENT AND  
ONBOARD CHECKOUT EQUIPMENT ARE ESSENTIALLY WITH US.  
LARGE PROGRAMMING ADVANCES APPEAR TO BE POSSIBLE IN  
THE NEAR FUTURE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 579 13/10 5/1 15/5  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP - THE USNS KIMBRO, A DRY CARGO  
SHIP. (U)

MAR 67 33P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MERCHANT VESSELS, \*MANAGEMENT  
ENGINEERING), (\*CARGO SHIPS, MANPOWER),  
INFORMATION RETRIEVAL, SYSTEMS ENGINEERING, JOB  
ANALYSIS, EFFECTIVENESS, SHIPBORNE, COSTS,  
FUNCTIONAL ANALYSIS (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS  
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY (20)  
DIFFERENT MERCHANT SHIPS. IT PRESENTS INFORMATION  
RELATING TO ONE OF THESE SHIPS. THIS REPORT ALSO  
DESCRIBES A SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF  
DATA REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A  
SHIP. (U)

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. 000123

AD-652 797                      12/2

STANFORD UNIV CALIF DEPT OF STATISTICS  
NON-DISCOUNTED DENUMERABLE MARKOVIAN DECISION  
MODELS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAY 67    39P                      ROSS, SHELDON M. I  
REPT. NO. TR-94  
CONTRACT: NONR-225(53)  
PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COSTS, \*MATHEMATICAL MODELS),  
(\*DECISION THEORY, \*PROBABILITY), STATISTICAL  
PROCESSES, OPERATIONS RESEARCH, DYNAMIC  
PROGRAMMING, OPTIMIZATION, REPLACEMENT THEORY,  
EFFECTIVENESS, SEQUENCES, THEOREMS

(U)

COUNTABLE STATE, FINITE ACTION MARKOVIAN DECISION  
PROCESSES ARE STUDIED UNDER THE AVERAGE COST  
CRITERION. THE PROBLEM IS STUDIED BY USING THE  
KNOWN RESULTS FOR THE DISCOUNTED-COST PROBLEM.  
SUFFICIENT CONDITIONS ARE GIVEN FOR THE EXISTENCE  
OF AN OPTIMAL RULE WHICH IS OF THE STATIONARY  
DETERMINISTIC TYPE. THIS RULE IS SHOWN TO BE, IN  
SOME SENSE, A LIMIT POINT OF THE OPTIMAL DISCOUNTED-  
COST RULES. SUFFICIENT CONDITIONS ARE ALSO GIVEN  
FOR THE OPTIMAL DISCOUNTED-COST RULES TO BE EPSILON-  
OPTIMAL WITH RESPECT TO THE AVERAGE COST CRITERION.  
IT IS SHOWN THAT IF THERE IS A REPLACEMENT ACTION  
THEN THERE EXISTS AN OPTIMAL RULE BUT IT MAY NOT BE  
OF THE STATIONARY DETERMINISTIC TYPE. IT IS ALSO  
SHOWN HOW, IN A SPECIAL CASE, THE AVERAGE COST  
CRITERION CAN BE REDUCED TO THE DISCOUNTED COST  
CRITERION. LASTLY, AN EXAMPLE IS GIVEN OF A  
PROCESS FOR WHICH THERE EXISTS AN OPTIMAL  
NONSTATIONARY RULE WHICH IS BETTER THAN ANY  
STATIONARY RULE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 977 5/9 13/10

TEMPLE UNIV PHILADELPHIA PA

AN INVESTIGATION OF THE PROBLEM OF MECHANIZATION AND  
WORKER SECURITY IN THE MARITIME INDUSTRY-LONGSHOREMEN  
ASPECT.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
67 123P LEWIS, STEPHEN J

UNCLASSIFIED REPORT

DESCRIPTORS: (\*LABOR UNIONS, \*MARINE  
ENGINEERING), (\*SHIPPING(MARINE), LABOR),  
PIERS, CARGO, HANDLING, PERSONNEL,  
ECONOMICS, LEADERSHIP, MANAGEMENT ENGINEERING,  
COSTS

(U)

WORKER RESISTANCE TO TECHNOLOGICAL CHANGE SHOULD BE  
EXPECTED IN VIEW OF THEIR BITTER EXPERIENCE IN THE  
PAST WITH BOTH EMPLOYER AND UNION GROUPS ALIKE.  
PSYCHOLOGICALLY, IT CANNOT BE EXPECTED THAT THE  
WORKFORCE WILL BE AGREEABLE TO CHANGE WHICH MIGHT  
AFFECT A CHANGE IN THOSE BENEFITS THEY HAVE FOUGHT SO  
HARD TO ACQUIRE--WHETHER THE CHANGE BE GOOD OR BAD,  
IT IS THE CHANGE ITSELF THAT THEY WOULD RESIST,  
EITHER BECAUSE OF THE REAL OR IMAGINATIVE PROBLEMS IT  
WILL CREATE. TECHNOLOGICAL CHANGE WILL BRING ABOUT  
A REDUCTION IN THE MANHOURS REQUIRED TO HANDLE CARGO  
MOVEMENT. RECENT STUDIES HAVE CONCLUDED THAT  
UNITIZED HANDLING, BOTH PALLETS AND CONTAINERIZATION,  
WILL REDUCE LONGSHORE HANDLING COSTS. THIS DOES  
NOT MEAN THAT THE LONGSHORE INDUSTRY WILL EXPERIENCE  
A REDUCTION IN THE NUMBER OF LONGSHOREMEN REQUIRED.  
THE ILWU-PMA AGREEMENT CONCLUDED IN 1960, WHICH  
ALLOWED FOR THE INTRODUCTION OF TECHNOLOGICAL  
IMPROVEMENTS, HAS NOT RESULTED IN A REDUCTION OF THE  
WORKFORCE REQUIRED. INDEED, LONGSHOREMEN  
REQUIREMENTS HAVE INCREASED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 159 17/2.1 9/5  
COMMUNICATION SYSTEMS INC PARAMUS N J  
WIDEBAND DIGITAL MODULATION AND DETECTION TECHNIQUES  
FOR TROPOSCATTER. (U)  
DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 3, 1 JAN-31 MAR  
67,  
MAY 67 44P LEVINE, E. ; ADAMS, P. T. ;  
GROBERT, P. ;  
REPT. NO. CSI-67-TR-2380  
CONTRACT: DA-28-043-AMC-02542(E)  
MONITOR: ECOM 02542-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-648 952.

DESCRIPTORS: (\*DATA TRANSMISSION SYSTEMS,  
\*MULTIPATH TRANSMISSION), MODULATION, DIGITAL  
SYSTEMS, TRANSMITTER-RECEIVERS,  
RELIABILITY (ELECTRONICS), COSTS, SIGNAL-TO-  
NOISE RATIO, DEMODULATORS, MODULATORS (U)

THE PROGRAM OBJECTIVE IS TO IDENTIFY AND BREADBOARD  
THE MODULATION TECHNIQUE OFFERING BEST PERFORMANCE  
FOR TRANSMISSION OF HIGH DIGITAL DATA RATES OVER  
TACTICAL TROPOSCATTER PATHS OF 50 TO 150 MILES AT 5  
GHZ. THE STUDY IS CONCERNED WITH HIGHER ORDER  
MODULATION CODING, IN-BAND DIVERSITY AND OTHER  
TECHNIQUES THAT MAY BRING ABOUT AN OPTIMAL MATCH TO  
THE MEDIUM. THE PRIME TRAFFIC RATES UNDER  
CONSIDERATION ARE 0.576 AND 1.15 MEGABITS PER SECOND.  
DURING THIS QUARTER, A SPECIFIC NEAR-OPTIMUM  
MODULATION TECHNIQUE WAS CHOSEN FOR IMPLEMENTATION,  
AND THE NECESSARY CIRCUITS FOR TRANSMITTER AND  
RECEIVER WERE PLANNED AND ANALYZED IN DETAIL. A  
TENTATIVE SET OF CIRCUIT BLOCK DIAGRAMS WAS  
COMPLETED. THIS CIRCUIT WAS THEN REFINED AND IT  
WAS FOUND POSSIBLE TO SIMPLIFY PARTS OF THE RECEIVER  
CIRCUITRY BY MODIFYING THE SPECIFIC DETECTION PROCESS  
USED WITH THE FIRST-CHOICE MODULATION PATTERN  
FULLY ANALYZED, AND THE REQUIRED CIRCUITS OUTLINED IN  
DETAIL, IT BECAME POSSIBLE TO CONSIDER TRADE-OFFS OF  
COST, COMPLEXITY, PROBABLE RELIABILITY AND SIZE  
FACTORS, AND OVERALL PERFORMANCE AS A FUNCTION OF  
SIMPLIFICATION AND MODIFICATION IN THE CHOICE OF  
PATTERN. A PARTICULARLY ATTRACTIVE SIMPLIFIED  
CHOICE OF MODULATION PATTERN RESULTS IN ABOUT TWO TO  
ONE REDUCTION IN CIRCUIT COST AND COMPLEXITY, AND  
APPEARS TO HAVE THEORETICAL ADVANTAGES IN LINKS  
HAVING A WIDE CORRELATION BANDWIDTH, ALLOWING WIDER  
FREQUENCY SPACING FOR IN-BAND DIVERSITY.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 177 5/3 5/1  
RAND CORP SANTA MONICA CALIF  
THE COST OF BASIC SCIENTIFIC RESEARCH IN EUROPE:  
DEPARTMENT OF DEFENSE EXPERIENCE, 1956-1966, (U)  
APR 67 57P BRUNNER, E. D. I  
REPT. NO. RM-5275-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SCIENTIFIC RESEARCH, COSTS),  
(\*EUROPE, SCIENTIFIC RESEARCH), (\*DEPARTMENT  
OF DEFENSE, BUDGETS), SCIENTIFIC PERSONNEL,  
WAGES, FEDERAL BUDGETS, STATISTICAL DATA (U)

AN ANALYSIS IS PRESENTED OF THE COST OF BASIC  
SCIENTIFIC RESEARCH OBTAINED IN EUROPE AND ISRAEL  
FROM 1956 THROUGH 1966 BY AGENCIES OF THE  
DEPARTMENT OF DEFENSE. COST-SHARING AGREEMENTS  
WITH EUROPEAN INSTITUTIONS AND GRANTS HAVE  
PREVENTED THE AVERAGE COST OF RESEARCH AGREEMENTS  
FROM RISING BETWEEN 1961-1962 AND 1965-1966. IN  
THE CASE OF NON-COST-SHARING AGREEMENTS, HOWEVER, THE  
COST HAS INCREASED THROUGHOUT THE ENTIRE PERIOD.  
AN ANALYSIS OF THE AVERAGE COST PER SCIENTIST PER  
MAN-MONTH FOR ALL TYPES OF RESEARCH REVEALS THAT THE  
COST OF BASIC RESEARCH OBTAINED IN THE UNITED  
STATES RANGED FROM THREE TO FOUR TIMES THE COST IN  
EUROPE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 508 5/3 17/1  
RAND CORP SANTA MONICA CALIF  
A METHOD FOR SELECTING CONTRACT COST INCENTIVES. (U)  
MAR 67 74P MILLER, RALPH E. ;  
REPT. NO. RM-5122-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CONTRACTS, COST EFFECTIVENESS),  
(\*GOVERNMENT PROCUREMENT, DECISION MAKING),  
SELECTION, COSTS, PROBABILITY, ECONOMICS (U)  
IDENTIFIERS: INCENTIVE CONTRACTING (U)

SELECTION OF AN APPROPRIATE SHARING RATE FOR COST  
INCENTIVE CONTRACTS MIGHT SAVE THE FEDERAL  
GOVERNMENT LARGE SUMS OF MONEY EACH YEAR.  
THEORETICAL CRITERIA FOR MAKING THIS CHOICE HAVE  
LONG BEEN KNOWN; HOWEVER, NO RESULTS HAVE BEEN  
ESTABLISHED BECAUSE SUITABLE EMPIRICAL ANALYSES OF  
THE PROBLEM ARE LACKING. THE MEMORANDUM CONSIDERS  
THE EMPIRICAL EVIDENCE NECESSARY FOR DETERMINING  
APPROPRIATE SHARING PROPORTIONS. IT SHOWS WHAT  
DATA ARE NEEDED, INDICATES HOW THEY SHOULD BE USED,  
AND PROPOSES A METHOD FOR COLLECTING THEM.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 636 1/5 4/2 1/4  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H  
FOG DISPERSAL EXPERIMENTS USING PROPANE AT WALLA  
WALLA, WASHINGTON. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
APR 67 18P HICKS, J. R. J  
REF. NO. CRREL-TR-198  
TASK: DA-1V014501B52402

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FOG, WASHINGTON(STATE)),  
(\*PROPANE, \*METEOROLOGICAL PHENOMENA),  
VISIBILITY, ARTIFICIAL PRECIPITATION, AIR  
TRAFFIC, AIRPORTS, RUNWAYS, SNOW, SCATTERING,  
COSTS, FREEZING, BRAKING (U)

PROPANE IS AN EFFECTIVE AGENT CAUSING GLACIATION OF  
SUPERCOOLED FOG DROPLETS AND SUBSEQUENT IMPROVEMENT  
OF VISIBILITY. WHEN WIND IS LESS THAN 5 OR 6 KNOTS  
AND STEADY WITH RESPECT TO DIRECTION, TWO OR THREE  
DISPENSERS, EACH EMITTING 2.5 TO 3 LB/MIN. OF LIQUID  
PROPANE, COULD PROBABLY KEEP AN AIRFIELD OPEN TO AIR  
TRAFFIC AT A COST OF ABOUT 20 DOLLARS PER HOUR.  
THE PROPANE SYSTEM IS EASY TO USE, INEXPENSIVE,  
REQUIRES NEITHER PREPARATION NOR PERSONNEL STANDBY  
TIME AFTER THE INITIAL INSTALLATION, AND IS EFFECTIVE  
AT TEMPERATURES HIGHER THAN THE EFFECTIVE TEMPERATURE  
OF THE MORE COMMONLY USED AGENTS. NO COMBUSTIBLE  
MIXTURE HAS BEEN FOUND BEYOND 8 FT FROM THE DISCHARGE  
NOZZLE OF THE PROPANE-AIR MIXTURE. ON AIRPORTS  
WITH SHORT RUNWAYS, THE REDUCED AIRCRAFT BRAKING  
INDEX CAUSED BY SNOW ACCUMULATION MIGHT BE SUFFICIENT  
TO RENDER THE SYSTEM UNSUITABLE UNLESS THE DISPENSERS  
COULD BE POSITIONED FAR ENOUGH FROM THE AIRPORT TO  
ALLOW THE SNOW TO FALL UPWIND OF THE RUNWAY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 643 5/3 15/5  
ARMY AVIATION MATERIEL COMMAND ST LOUIS MO  
PROCUREMENT: MULTIPLE INCENTIVE CONTRACTING, (U)  
SCIENTIFIC CONTRACTING WITH ACCENT ON TRADE-OFF, (U)  
MAY 67 115P SMITH, NORMAN H. J  
MONITOR: DA-PAM 715-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CONTRACTS, \*PROCUREMENT),  
DECISION MAKING, COSTS, COST EFFECTIVENESS, (U)  
ANALYSIS, MANAGEMENT ENGINEERING (U)  
IDENTIFIERS: INCENTIVE CONTRACTING (U)

INCENTIVE CONTRACTS, THOSE CONTRACTS IN WHICH THE  
SELLER IS REWARDED (OR PENALIZED) ACCORDING TO  
PERFORMANCE ACHIEVED, CAN WORK TO THE ADVANTAGE OF  
THE SELLER OR THE BUYER, TO BOTH, OR TO NEITHER.  
THE REPORT EMPHASIZES THE NEED FOR A METHOD OF  
ANALYSIS OF INCENTIVE ARRANGEMENTS SO THAT THE TRUE  
RELATIONSHIPS BETWEEN COST AND PERFORMANCE AND THEIR  
INFLUENCE ON FEE EARNED MAY BE KNOWN IN ADVANCE OF  
NEGOTIATION OR SIGNING OF A CONTRACT. THE REPORT  
IS WRITTEN PRIMARILY FOR MANAGEMENT AND HAS LITTLE OF  
THE TECHNICAL DETAILS. THERE ARE MANY EXAMPLES  
WITH GRAPHS SHOWING THE RELATIONSHIP OF COST,  
PERFORMANCE AND FEE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 669 13/13  
STANFORD RESEARCH INST MENLO PARK CALIF  
COST TRENDS OF MASS PRODUCTION AS APPLIED TO 5-10 PSI  
SHELTERS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 67 92P CURIONE, CHARLES I  
PROJ: SRI-MU-4949-022

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHELTERS, COSTS), INDUSTRIAL  
PRODUCTION, PREFABRICATED BUILDINGS, CONSTRUCTION,  
CONCRETE, WEIGHT (U)

THE PRIMARY OBJECTIVE OF THE STUDY WAS TO DETERMINE  
THE COST REDUCTION POTENTIAL OF MASS PRODUCTION  
TECHNIQUES APPLIED TO 5-10 PSI SHELTER CONSTRUCTION  
PROGRAMS. VARIOUS INDUSTRIES EMPLOYING MASS  
PRODUCTION METHODS IN THE MANUFACTURE OF STRUCTURES  
OR STRUCTURAL COMPONENTS WERE INVITED TO PROVIDE  
COMMENTS PERTINENT TO THIS RESEARCH. REPORTS AND  
STUDIES COVERING SHELTER COSTS WERE REVIEWED, AND  
APPLICABLE COST DATA WERE INTEGRATED INTO THE REPORT.  
THE FINDINGS OF THIS RESEARCH INDICATE THAT SOME  
COST REDUCTION CAN BE ACHIEVED BY USE OF MASS  
PRODUCTION TECHNIQUES WHERE SUCH TECHNIQUES ARE  
APPLIED TO SHELTER CONSTRUCTION. HOWEVER, MASS  
PRODUCTION DOES NOT ALWAYS ACHIEVE THE MAGNITUDE OF  
COST REDUCTION THAT ONE MIGHT EXPECT FROM THIS  
TECHNIQUE. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 885 15/5 5/1

STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH  
OPTIMALITY OF MYOPIC INVENTORY POLICIES FOR SEVERAL  
SUBSTITUTE PRODUCTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

JUN 67 51P IGNALL, EDWARD ;

VEINOTT, ARTHUR F. , JR;

REPT. NO. TR-8

CONTRACT: NONR-225(77)

PROJ: NR-347-010

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
COLUMBIA UNIV., NEW YORK. CONTRACT NONR-  
266(55).

DESCRIPTORS: (\*PROCUREMENT, DECISION MAKING),  
(\*INVENTORY, OPTIMIZATION), INVENTORY  
ANALYSIS, INVENTORY CONTROL, COSTS, NONLINEAR  
PROGRAMMING, DYNAMIC PROGRAMMING, STOCHASTIC  
PROCESSES (U)

MULTIPRODUCT INVENTORY SYSTEMS WITH PROPORTIONAL  
ORDERING COSTS AND STOCHASTIC DEMANDS ARE STUDIED.  
NEW CONDITIONS ARE OBTAINED UNDER WHICH A MYOPIC  
ORDERING POLICY (A POLICY OF MINIMIZING EXPECTED  
COST IN THE CURRENT PERIOD ALONE) IS OPTIMAL FOR A  
SEQUENCE OF PERIODS FOR ALL INITIAL INVENTORY LEVELS.  
AN IMPORTANT ONE OF THESE, THE SUBSTITUTE PROPERTY,  
HOLDS WHEN THE MYOPIC POLICY IS SUCH THAT INCREASING  
THE INITIAL INVENTORY OF ONE PRODUCT DOES NOT  
INCREASE THE QUANTITY ORDERED OF ANY PRODUCT.  
CONDITIONS ON THE ONE PERIOD EXPECTED HOLDING AND  
SHORTAGE COST FUNCTION, WHICH ARE OF INDEPENDENT  
INTEREST IN NONLINEAR PROGRAMMING, ARE SHOWN TO IMPLY  
THE SUBSTITUTE PROPERTY. APPLICATIONS OF THESE  
CONDITIONS TO MODELS WITH STORAGE OR INVESTMENT  
LIMITATIONS AND TO A MULTIECHELON MODEL ARE GIVEN.  
UNDER BACKLOGGING THE USUAL EXTENSION TO A FIXED  
DELIVERY LAG IS OBTAINED. SOME NON-STATIONARY  
CASES ARE ALSO TREATED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-654 181 15/5 14/1 5/1  
LOGISTICS MANAGEMENT INST WASHINGTON D C  
LIFE CYCLE COSTING IN EQUIPMENT PROCUREMENT. (U)  
DESCRIPTIVE NOTE: SUPPLEMENTAL REPT.  
FEB 67 112P  
CONTRACT: SD-271  
TASK: 66-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*LOGISTICS, \*COSTS), (\*COST  
EFFECTIVENESS, \*ARMED FORCES PROCUREMENT),  
PERFORMANCE(ENGINEERING), EFFECTIVENESS,  
RELIABILITY, MAINTAINABILITY, MANAGEMENT  
ENGINEERING, DECISION MAKING, DEPARTMENT OF  
DEFENSE (U)  
IDENTIFIERS: \*LIFE EXPECTANCY, LIFE CYCLE  
COSTING (U)

THE REPORT SUMMARIZES PROGRESS OF THE DOD  
LIFE CYCLE COSTING TEST PROGRAM SINCE ITS  
ESTABLISHMENT IN JULY 1965. THAT PROGRAM, A  
COLLECTIVE EFFORT OF THE OFFICE OF THE SECRETARY  
OF DEFENSE, THE MILITARY DEPARTMENTS, AND DEFENSE  
INDUSTRY, IS ASSESSING THE PRACTICABILITY OF MAKING  
CONTRACT AWARDS ON THE BASIS OF ESTIMATED FUTURE  
LOGISTICS COSTS AS WELL AS PURCHASE PRICE. THE  
THIRTY-FIVE QUESTIONS MOST FREQUENTLY ASKED DURING  
THE TEST PROGRAM ARE PRESENTED AND ANSWERED. SEVEN  
TEST PROCUREMENTS ARE DESCRIBED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-654 384 9/2 14/1 5/1 12/2  
NAVAL RESEARCH LAB WASHINGTON D C  
THE THROUGHPUT AND COST EFFECTIVENESS OF  
MONOPROGRAMMED, MULTIPROGRAMMED, AND MULTIPROCESSING  
DIGITAL COMPUTERS. (U)  
DESCRIPTIVE NOTE: DOCTORAL THESIS,  
APR 67 136P WALD, BRUCE ;  
REPT. NO. NRL-6549  
PROJ: RF-001-08-41

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DIGITAL COMPUTERS, \*COST  
EFFECTIVENESS), ECONOMICS, THESES, COSTS,  
OPERATIONS RESEARCH, COMPUTER STORAGE DEVICES,  
SYSTEMS ENGINEERING, PROGRAMMING (COMPUTERS),  
MATHEMATICAL MODELS (U)  
IDENTIFIERS: MULTIPROGRAMMING, (U)  
MULTIPROCESSING

A GENERALIZED MODEL OF A DIGITAL COMPUTER SYSTEM  
WITH A WORKLOAD DRAWN FROM A PROFFERED INFINITE  
WORKLOAD WAS INVESTIGATED TO DETERMINE THE FACTORS  
THAT AFFECT THROUGHPUT AND COST EFFECTIVENESS TO  
ALLOW OPTIMIZATION OF THE SYSTEM PARAMETERS.  
THROUGHPUT WAS DEFINED AS THE SUM OF THE PRODUCTS  
OF THE COST OF EACH COMPONENT AND THE PROPORTION OF  
THE TIME EACH COMPONENT WAS BENEFICIALLY USED.  
COST EFFECTIVENESS WAS DEFINED AS THE QUOTIENT OF  
THROUGHPUT AND SYSTEM COST, WITH UNITY BEING THE  
IDEAL QUOTIENT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 578 15/5 14/1  
GEORGE WASHINGTON UNIV WASHINGTON D C LOGISTICS RESEARCH  
PROJECT  
SIMULATION OF A MULTI-ECHELON LOGISTICS SUPPORT  
SYSTEM, (U)  
JUN 67 54P HARBER, SHELDON E. ;  
REPT. NO. SERIAL T-192  
CONTRACT: N00014-67-A-0214  
PROJ: NR-047-001  
TASK: 0001

UNCLASSIFIED REPORT

DESCRIPTORS: (\*LOGISTICS, COMPUTER PROGRAMS),  
COST EFFECTIVENESS, INVENTORY CONTROL, BALLISTIC  
MISSILE SUBMARINES, WEAPON SYSTEMS, STOCK LEVEL  
CONTROL, SIMULATION, TENDERS(VESSELS) (U)

A COMPUTER PROGRAM FOR SIMULATING ALTERNATIVE  
INVENTORY POLICIES FOR A MULTI-ECHELON LOGISTICS  
SUPPORT SYSTEM IS DESCRIBED. IN ITS PRESENT FORM,  
THE COMPUTER PROGRAM SIMULATES A FORCE COMPOSED OF  
NINE POLARIS SUBMARINES, ONE TENDER AND ONE DEPOT.  
ATTENTION IS GIVEN IN THE PAPER TO THE  
REPRESENTATION OF THE PHYSICAL SYSTEM, DIVERGENCIES  
FROM THE ACTUAL ENVIRONMENT, DECISION RULES INTERNAL  
TO THE COMPUTER PROGRAM AND COMPUTER INPUTS AND  
OUTPUTS. AN ACTUAL SIMULATION EXPERIMENT IS  
DESCRIBED AND EVALUATED IN TERMS OF THE COST AND  
EFFECTIVENESS MEASUREMENTS PERMITTED VIA UTILIZATION  
OF THE SIMULATOR. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-654 893 20/7

STANFORD UNIV CALIF HIGH ENERGY PHYSICS LAB  
DESIGN OF A HIGH ENERGY, HIGH DUTY CYCLE RACETRACK  
MICROTRON, (U)

MAY 67 36P WILK, R. H. ; WILSON, P. B.

REPT. NO. HEPL-493  
CONTRACT: NONR-225(67)

UNCLASSIFIED REPORT  
SUBMITTED FOR PUBLICATION IN NUCLEAR INSTRUMENTS AND  
METHODS.

DESCRIPTORS: (\*CYCLOTRONS, ELECTRON  
ACCELERATORS), DESIGN, COSTS, ELECTRON BEAMS,  
ELECTRON OPTICS, RADIOFREQUENCY POWER, PHASE,  
STABILITY (U)

IDENTIFIERS: MICROTRONS (U)

THE CALCULATED PROPERTIES OF THE SPLIT-MAGNET  
RACETRACK MICROTRON COMPARE VERY FAVORABLY WITH THE  
PROPERTIES OF OTHER TYPES OF ELECTRON ACCELERATORS IN  
THE 100-600 MEV ENERGY RANGE. IN COMPARISON  
WITH AN ELECTRON LINAC USING A COMPARABLE AMOUNT OF  
AVERAGE RF POWER, THE ENERGY HOMOGENEITY AND DUTY  
CYCLE OF THE MICROTRON ARE SUPERIOR BY AN ORDER OF  
MAGNITUDE, WHILE THE AVERAGE CURRENT IS COMPARABLE.  
IN ADDITION, THE MICROTRON IS CONSIDERABLY MORE  
COMPACT. COMPARED WITH OTHER CIRCULAR  
ACCELERATORS, THE MICROTRON HAS THE ADVANTAGE OF HIGH  
AVERAGE CURRENT AND THE EASE OF BEAM EXTRACTION  
ASSOCIATED WITH A LINAC. A ROUGH ESTIMATE WAS MADE  
OF THE COST OF THE MAJOR COMPONENTS FOR THE PROPOSED  
MICROTRON. INCLUDED IN THE ESTIMATE IS THE COST OF  
MAGNETS, QUADRUPOLES, KLYSTRONS, MODULATORS, RF  
COMPONENTS, ACCELERATING STRUCTURES, VACUUM CHAMBER,  
INJECTOR, AND AN ALLOWANCE FOR MISCELLANEOUS ITEMS.  
THE COST OF THESE COMPONENTS FOR THE 400 MEV  
MACHINE, USING THE LOWER POWER 3% DUTY CYCLE RF  
SYSTEM, IS ESTIMATED TO BE LESS THAN 1-1/2 MILLION  
DOLLARS. FOR THE 600 MEV MICROTRON, USING THE  
HIGHER DUTY CYCLE RF SYSTEM, THE COST OF THE BARE  
MACHINE IS ESTIMATED TO BE ABOUT TWO MILLION DOLLARS.  
THE COST OF HOUSING, INSTALLATION, AND EXPERIMENTAL  
FACILITIES MUST BE ADDED TO THE PRECEDING FIGURES.  
IT IS ESTIMATED THAT THE COST FOR A COMPLETED  
MACHINE OF THE DESIGN PROPOSED HERE WOULD BE ABOUT 20  
TO 30% OF THE COST FOR AN ELECTRON LINAC WITH  
COMPARABLE ENERGY AND DUTY CYCLE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 189 5/1 14/1 13/6  
PLANNING RESEARCH CORP LOS ANGELES CALIF  
STUDY OF A PLANNING-PROGRAMMING-BUDGETING SYSTEM FOR  
TRANSPORTATION. VOLUME III. EXERCISING THE P P B  
SYSTEM. (U)  
APR 67 162P  
REPT. NO. PRC-R-1003-VOL-3  
CONTRACT: C-204-66

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 187 AND AD-655  
188.

DESCRIPTORS: (\*TRANSPORTATION, \*MANAGEMENT  
PLANNING), (\*FEDERAL BUDGETS, \*DECISION  
MAKING), OPERATIONS RESEARCH, SYSTEMS  
ENGINEERING, COSTS, SAFETY, ECONOMICS,  
EFFICIENCY, MONEY, NUMERICAL ANALYSIS (U)

THIS VOLUME EXERCISES THE SYSTEM DESCRIBED IN  
VOLUME II AND REPORTS ON AN INITIAL ATTEMPT TO  
ORDER AND QUANTIFY OBJECTIVES, NEEDS, GOALS,  
CONSTRAINTS, PROGRAM COSTS, PFP, AND THEIR  
INTERRELATIONSHIPS. TWO OF THE PRINCIPAL  
OBJECTIVES FROM THE LIST OF 19 IDENTIFIED NATIONAL  
TRANSPORTATION OBJECTIVES WERE QUANTIFIED IN SOME  
DEPTH. TREATING THESE TWO OBJECTIVES IN DETAIL  
TENDED TO IDENTIFY PROBLEMS OF IMPORTANCE IN  
VALIDATING AND EXTENDING PPB TO THE OPERATIONAL  
LEVEL. SIGNIFICANT INSIGHTS WERE OBTAINED IN THE  
PROCESS. A CONCLUDING SECTION DISCUSSES  
ALTERNATIVES TO THE CURRENTLY EXPRESSED OBJECTIVES OF  
THE NATIONAL TRANSPORTATION SYSTEM. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 284 15/3  
IIT RESEARCH INST CHICAGO ILL  
CIVIL DEFENSE SHELTER OPTIONS FOR FALLOUT AND BLAST  
PROTECTION (DUAL-PURPOSE). (U)  
DESCRIPTIVE NOTE: FINAL REPT. AND SUMMARY MAR 65-NOV  
66,  
MAY 67 234P LONGINOW, A. I  
PROJ: IITRI-M6101

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CIVIL DEFENSE SYSTEMS, \*FALLOUT  
SHELTERS), RADIOACTIVE FALLOUT, NUCLEAR  
EXPLOSION DAMAGE, PROTECTION, DESIGN,  
UNDERGROUND EXPLOSIONS, COSTS, UNDERGROUND  
STRUCTURES, EFFECTIVENESS, BLAST, MAPS,  
ECONOMICS, CONSTRUCTION, TABLES (U)

THE EFFORT REPORTED HEREIN IS CONCERNED WITH  
CIVILIAN DUAL-USE PERSONNEL SHELTERS. ITS PRIMARY  
OBJECTIVES ARE: TO DETERMINE FOR NUCLEAR WEAPONS  
ENVIRONMENTS OTHER THAN FALLOUT RADIATION ALONE, THE  
EXTENT OF THE ECONOMIC ADVANTAGES OF DUAL-USE SHELTER  
SYSTEMS WITH RESPECT TO EXPECTED PERCENT OF  
POPULATION THUS SHELTERED. TO BRING INTO SHARPER  
FOCUS THOSE AREAS IN WHICH MORE RESEARCH OR ANALYSIS  
IS NECESSARY IN ORDER TO INCREASE THE EFFECTIVENESS  
OF THIS SHELTERING CONCEPT. TOPICS SUPPLEMENTARY  
TO THE ABOVE OBJECTIVES INCLUDE: ESTIMATED  
CONSTRUCTION TRENDS IN SELECTED TYPES OF  
CONSTRUCTION; A LIMITED STUDY ON THE USE OF  
EXPRESSWAY GRADE SEPARATIONS AS DUAL-USE SHELTERS,  
AND COST ESTIMATING AND COST REPORTING AS APPLIED TO  
DUAL-USE SHELTERS. RESULTS OF THIS EFFORT DEALING  
WITH A LARGE NUMBER OF EXISTING RELATED TOPICS ARE  
CONTAINED IN THIS REPORT. THESE RESULTS ARE IN THE  
FORM OF ASSEMBLED AND UPDATED COSTS AS WELL AS  
PHYSICAL AND ENVIRONMENTAL DATA AND CONCLUSIONS.  
(AUTHOR) (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 342 22/2  
RAND CORP SANTA MONICA CALIF  
ORBITAL BASING: KEY TO LOW COST SPACE  
OPERATIONS,  
JUL 67 25P SEARS, G. A. ;  
REPT. NO. P-3570

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE STATIONS, COSTS),  
MANNED, RECOVERY, LIFE EXPECTANCY, TRAFFIC,  
LAUNCHING, OPERATION, WEIGHT

(U)

A COMPARISON IS MADE OF SOME OF THE OPERATIONAL AND COST-INFLUENCING CHARACTERISTICS OF LOW-ORBIT SPACE OPERATIONS CONDUCTED FROM A MANNED ORBITAL BASE AND FROM AN EARTH BASE. THE EARTH-BASED MODE OF OPERATION IS THAT EMPLOYED TODAY, WHEREBY EXPENDABLE SPACECRAFT ARE PLACED IN MISSION ORBITS WITH EXPENDABLE LAUNCH VEHICLES. IN THE ORBITAL-BASING CONCEPT THE SPACECRAFT ARE BASED AT A MANNED SPACE STATION, ARE INJECTED INTO THEIR MISSION ORBITS AS REQUIRED, AND SUBSEQUENTLY RENDEVOUS WITH THE SPACE STATION FOR REJUVENATION AND REUSE. REUSE HAS LONG BEEN CONSIDERED THE KEY TO LOWERING THE VERY HIGH COST OF SPACE OPERATIONS; HOWEVER, MOST REUSE CONCEPTS STUDIED IN DEPTH HAVE INVOLVED RECOVERY TO EARTH OF LAUNCH VEHICLES AND/OR SPACECRAFT. THE REASONS WHY DEVELOPMENT OF REUSABLE SYSTEMS HAS NOT BEEN INITIATED ARE MANY, PROMINENT AMONG WHICH ARE THESE: (1) VERY SIGNIFICANT WEIGHT PENALTIES ARE ASSOCIATED WITH RECOVERY GEAR, PARTICULARLY ORBITAL RECOVERY GEAR; (2) REFURBISHMENT COSTS AND USEFUL LIFE OF RECOVERED VEHICLES ARE DIFFICULT TO APPRAISE; AND (3) TRAFFIC RATES ARE NOT FORESEEN WHICH ARE ADEQUATE TO AMORTIZE R AND D COSTS OF BILLIONS OF DOLLARS OVER A REASONABLE TIME PERIOD. THESE PROBLEMS ARE ALL ASSOCIATED WITH RECOVERY, HOWEVER, AND CAN BE AVOIDED BY REUSE OF EQUIPMENT ON ORBIT. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. 000123

AD-655 344            12/2            15/5            5/1  
RAND CORP SANTA MONICA CALIF  
A STOCHASTIC DYNAMIC MULTIMODE TRANSPORTATION  
MODEL,  
JUL 67            39P            MIDLER, J. L. :  
REPT. NO. RM-5250-PR  
CONTRACT: F44620-67-C-0045

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TRANSPORTATION, MATHEMATICAL  
MODELS), (\*DYNAMIC PROGRAMMING, OPERATIONS  
RESEARCH), STOCHASTIC PROCESSES, SCHEDULING,  
MANAGEMENT PLANNING, OPTIMIZATION, ALGORITHMS,  
COSTS, ECONOMICS

(U)

IDENTIFIERS: OPTIMAL CONTROL THEORY

(U)

A MATHEMATICAL MODEL AND TWO SOLUTION TECHNIQUES  
FOR SELECTING PREFERRED COMBINATIONS OF DIFFERENT  
TRANSPORTATION MODES OVER CONSECUTIVE PERIODS IN THE  
FACE OF UNCERTAINTY. SOME ACQUAINTANCE WITH  
CONTROL THEORY, DYNAMIC PROGRAMMING, AND NONLINEAR  
PROGRAMMING IS ASSUMED. THE MODEL IS FORMULATED AS  
A PROBLEM OF OPTIMAL STOCHASTIC CONTROL THEORY. IT  
ASSIGNS INDIVIDUAL COMMODITY CLASSES TO VARIOUS  
CARRIERS, DETERMINES WHICH SUPPLY POINTS SERVE WHICH  
DESTINATIONS, AND REROUTES CARRIERS WHERE THEY WILL  
BE MOST EFFECTIVE. IT TAKES ACCOUNT OF  
DIFFERENTIAL TRANSIT TIMES AND COSTS, AVAILABILITIES,  
COSTS OF STORAGE, OVER-SUPPLY AND SHORTAGES. THE  
SYSTEM DYNAMICS CONSIST OF INVENTORY BALANCE  
EQUATIONS RELATING END-OF-PERIOD STOCKS AT EACH POINT  
TO INFLOWS AND OUTFLOWS. AN ALTERNATIVE METHOD IS  
ALSO PRESENTED FOR CASES IN WHICH THE ASSUMPTIONS  
REQUIRED FOR THE DYNAMIC PROGRAMMING ALGORITHM ARE  
NOT VALID.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 922 17/7 1/2  
PARAMETRICS INC WALTHAM MASS  
RADIOISOTOPE TAXI GUIDANCE SYSTEM PHASE I.  
FEASIBILITY STUDY. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
MAR 67 74P SELLERS, B. THUNERWADEL, J. I  
ZIEGLER, C. I  
CONTRACT: F2-65-WA-1334  
PROJ: FA-320-108-01N  
MONITOR: FAA-RD 67-18

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TAXIING, GUIDANCE),  
(\*GUIDANCE, RADIOACTIVE ISOTOPES), FEASIBILITY  
STUDIES, GAMMA COUNTERS, COLLIMATORS, RUNWAYS,  
COSTS, POSITION FINDING, PIPES, KRYPTON,  
SAFETY (U)

METHODS UTILIZING RADIOISOTOPES AS AN INTEGRAL PART OF AN ALL WEATHER, ZERO VISIBILITY, GROUND GUIDANCE SYSTEM HAVE BEEN EVALUATED. THE MOST PROMISING TECHNIQUE HAS BEEN SELECTED AND EXAMINED IN DETAIL BOTH THEORETICALLY AND EXPERIMENTALLY AND A SYSTEM DESIGN IS PRESENTED. THE METHOD EMPLOYS A STATIONARY AVIONIC GAMMA RAY DETECTOR ENCLOSED BY A ROTATING COLLIMATOR, WHICH SENSES THE POSITION OF THE AIRCRAFT RELATIVE TO A RADIOISOTOPIC LINE SOURCE OF RADIATION BURIED BENEATH THE RUNWAY CENTERLINE. THE AVIONIC UNIT, APPROXIMATELY ONE CUBIC FOOT IN VOLUME, CAN BE MOUNTED IN THE INTERIOR OF THE AIRCRAFT AND NO STRUCTURAL MODIFICATIONS OF THE AIRCRAFT ARE REQUIRED. THE INFORMATION DISPLAYED FOR THE PILOT IS THE POSITION OF THE AIRCRAFT RELATIVE TO THE CENTERLINE, WITH AN ACCURACY OF BETTER THAN PLUS OR MINUS 5 FEET AT THE CENTERLINE. THE STANDARD RADARSCOPE CAN BE USED AS A DISPLAY. A KEY FEATURE OF THE SYSTEM IS THAT IT USES A CHEMICALLY INERT RADIOACTIVE GAS, KRYPTON-85, WHICH IS DEPLOYED IN THE PIPE LAID IN THE RUNWAY. WHEN NOT IN USE THE GAS CAN BE REMOVED FROM THE RUNWAY USING CONVENTIONAL GAS HANDLING AND PUMPING APPARATUS. RADIATION SAFETY ASPECTS OF AN OPERATIONAL SYSTEM HAVE BEEN EXAMINED AND FOUND TO PRESENT NO HAZARD BEYOND NORMAL INDUSTRIAL PRACTICE. AN ADDITIONAL FEATURE OF THE RADIOISOTOPE SYSTEM IS THAT IT CAN FORM THE BASIS FOR AN AIRCRAFT LOCATION AND GROUND CONTROL SYSTEM. THE ESTIMATED TOTAL INSTALLATION COST OF THE GROUND GUIDANCE SYSTEM IN A TYPICAL AIRPORT (DULLES) IS ABOUT \$41,000. THE AVIONIC UNITS WILL COST BETWEEN \$2,300 AND (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 581 5/9  
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C  
PERSONNEL RESEARCH LAB  
ON-THE-JOB TRAINING COSTS: AN ANALYSIS, (U)  
JUN 67 44P ARZIGIAN, SIMON ;  
REPT. NO. WRY-67-52  
PROJ: PFO16010302

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL TRAINING, COSTS),  
PERSONNEL MANAGEMENT, NAVAL PERSONNEL, LEARNING,  
WAGES (U)  
IDENTIFIERS: ON-THE-JOB TRAINING (U)

THE STUDY PRESENTS THE RESULTS OF A PRELIMINARY INVESTIGATION OF THE FEASIBILITY OF COMPUTING ON-THE-JOB TRAINING COSTS. FOR THE PURPOSE OF THIS STUDY ON-THE-JOB TRAINING IS THAT WHICH INVOLVES LEARNING OR IMPROVING JOB PERFORMANCE UNDER ACTUAL WORKING CONDITIONS. AT PRESENT THERE IS NO SYSTEM WITHIN THE NAVY TO 'COST OUT' ON-THE-JOB TRAINING. TRAINING COST REPORTING IS LIMITED TO FORMAL, OR SCHOOL, TRAINING. THE ADDITION OF AN ON-THE-JOB TRAINING COST TO THE SCHOOL COST (IF ANY) WOULD PROVIDE A MORE 'COMPLETE' TRAINING COST. TRAINING COSTS PLAY A MAJOR PART IN MANY PERSONNEL MANAGEMENT DECISIONS; THEREFORE A TRAINING COST WHICH REFLECTS ALL THE TRAINING PROVIDED AN INDIVIDUAL WOULD PROVE VALUABLE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-656 613 5/9 4/1  
GEORGE WASHINGTON UNIV ALEXANDRIA VA HUMAN RESOURCES  
RESEARCH OFFICE  
COMPUTER-ADMINISTERED INSTRUCTION VERSUS  
TRADITIONALLY ADMINISTERED INSTRUCTION:  
ECONOMICS; (U)

JUN 67 43P KOPSTEIN, FELIX F. ;  
SEIDEL, ROBERT J. ;  
REPT. NO. PROFESSIONAL PAPER 31-67  
CONTRACT: DA-44-188-ARO-2  
PROJ: DA-2J024701A712-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE NATIONAL SOCIETY  
FOR PROGRAMMED INSTRUCTION, BOSTON, MASS., APRIL  
1967.

DESCRIPTORS: (\*TEACHING METHODS; COST  
EFFECTIVENESS); COMPUTERS; INSTRUCTORS;  
PROGRAMMED INSTRUCTION; ECONOMICS; EDUCATION;  
MILITARY TRAINING; PROGRAMMING(COMPUTERS) (U)

AN ATTEMPT IS MADE TO ASSAY THE ECONOMICS OF  
COMPUTER-ADMINISTERED INSTRUCTION (CAI) VERSUS  
TRADITIONALLY ADMINISTERED INSTRUCTION (TAI) IN  
CONTROLLING THE STRUCTURE OF THE LEARNER'S STIMULUS  
ENVIRONMENT IN TEACHING AND TRAINING SITUATIONS.  
THERE IS A DISCUSSION OF THE NEED FOR A SOUND,  
OBJECTIVE ECONOMIC APPRAISAL OF THE VALUE TO SOCIETY  
AS A WHOLE OF INCREMENTS IN THE BREADTH AND DEPTH OF  
EDUCATION IN THE POPULATION, AND OF THE INFLUENCE OF  
VARYING RATES WITH WHICH THESE INCREMENTS ARE BROUGHT  
ABOUT. THE NECESSITY FOR RELIABLE, OBJECTIVE  
INFORMATION CONCERNING COST DATA IS EMPHASIZED.  
PROJECTED COST/EFFECTIVENESS COMPARISONS BASED ON  
THE ASSUMPTION OF EQUAL EFFECTIVENESS FOR CAI AND  
TAI ARE DISCUSSED FOR BOTH CIVILIAN AND MILITARY  
INSTRUCTION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-656 940 5/1 15/3 13/13  
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND  
ECONOMICS DIV  
BUDGE ALLOCATION FOR SHELTER SYSTEMS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 67 107P McMULLAN, PHILIP S. ;  
WRIGHT, JAMES C. ; ANDERSON, HELEN S. ;  
TRUSTMAN, STANLEY ;  
REPT. NO. RTI-OU-230-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FALLOUT SHELTERS, \*BUDGETS),  
(\*CIVIL DEFENSE SYSTEMS, BUDGETS),  
OPTIMIZATION, PROBABILITY, COST EFFECTIVENESS,  
MANAGEMENT PLANNING (U)

A COMPUTER MODEL WHICH PREPARES OPTIMUM CIVIL  
DEFENSE SHELTER POSTURES BUILT UPON THE BASE OF THE  
CURRENT NATIONAL FALLOUT SHELTER SURVEY IS  
DEVELOPED, PROGRAMMED, AND DEMONSTRATED. 'OPTIMUM'  
CAN BE BASED ON THE USER-SPECIFIED OBJECTIVE OF  
EITHER MINIMUM FATALITIES OR MINIMUM CASUALTIES.  
THE USER DETERMINES THE LEVEL OF RISK BY SUPPLYING  
AN ATTACK ENVIRONMENT (BOTH BLAST AND FALLOUT)  
WHICH IS USED TO CALCULATE THE PROBABILITY OF  
FATALITY (OR CASUALTY) FOR A PERSON IN EACH  
EXISTING SHELTER AND IN EACH PROPOSED SHELTER OPTION  
IN EACH STANDARD LOCATION. POPULATION IS THEN  
ASSIGNED TO EXISTING AND PROPOSED SHELTER IN AN  
OPTIMUM MANNER, SUBJECT TO THE SPECIFIED BUDGET.  
THE MATHEMATICAL FORMULATION IS EQUIVALENT TO A  
LINEAR PROGRAM. THE MODEL ALSO PERMITS AN  
EVALUATION OF SHELTER IMPROVEMENT PROGRAMS AGAINST  
ANY USER SUPPLIED ATTACK ENVIRONMENT. AT THE  
OPTION OF THE USER, THE FOLLOWING INPUTS MAY BE  
VARIED: (A) BUDGET LEVEL, (B) DEGREE OF  
RISK OR HAZARD, (C) DEFINITION OF SHELTER FALLOUT  
OR BLAST VULNERABILITY, AND (D) COST PER SPACE OF  
SHELTER. THE MODEL WAS DEMONSTRATED USING THE  
STATE OF RHODE ISLAND. THE MODEL CAN BE USED  
PRIMARILY IN SYNTHESIS AND ANALYSIS OF 'NEAR FUTURE'  
SHELTER SYSTEMS AND CAN BE MODIFIED FOR USE IN MORE  
COMPREHENSIVE SYSTEM STUDIES (E.G., COMBINED  
WARNING, MOVEMENT, AND SHELTER SYSTEM STUDIES) AND  
COST-EFFECTIVENESS EVALUATIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 010 16/4  
RAND CORP SANTA MONICA CALIF  
OPTIMUM MAINTENANCE WITH INCOMPLETE INFORMATION, (U)  
AUG 67 29P ECKLES, JAMES E. I  
REPT. NO. RM-5390-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GUIDED MISSILES(AIR-TO-AIR);  
RANDOM VARIABLES); (\*MAINTENANCE; \*COSTS);  
PERFORMANCE(ENGINEERING); DYNAMIC PROGRAMMING;  
MATHEMATICAL MODELS; STOCHASTIC PROCESSES;  
EQUATIONS; AGING(MATERIALS); DETERIORATION;  
PROBABILITY; OPTIMIZATION (U)

AN ANALYSIS OF THE MAINTENANCE OF SYSTEMS WITH  
RANDOMLY DECREASING PERFORMANCE LEVELS THAT CAN BE  
ESTIMATED ONLY BY COSTLY IMPERFECT INSPECTION. A  
MODEL IS DEVELOPED TO DETERMINE THE SEQUENCE OF  
ACTIONS THAT MINIMIZES THE TOTAL COST OF OPERATION.  
UNLIKE MOST INVESTIGATIONS, THE STUDY TREATS  
MAINTENANCE AS A SEQUENTIAL DECISION PROCESS. THIS  
VIEW LEADS TO THE CONSIDERATION OF MAINTENANCE  
POLICIES IN WHICH CORRECTIVE AND INSPECTION SCHEDULES  
ARE DEPENDENT ON THE RESULTS OF RECENT INSPECTIONS.  
A DYNAMIC-PROGRAMMING TECHNIQUE IS USED TO DERIVE A  
FUNCTIONAL EQUATION FOR THE OPTIMUM MAINTENANCE  
POLICY. IT IS SHOWN THAT AN OPTIMUM ACTION  
(REPLACEMENT, REPAIR, INSPECTION, ETC.) IS  
DETERMINED BY THE SYSTEM'S AGE AND THE POSTERIOR  
DISTRIBUTION OVER THE SYSTEM'S STATES. SIMPLE  
POLICIES SUCH AS PERIODIC INSPECTION ARE READILY SEEN  
TO BE NONOPTIMAL IN THE FACE OF IRREGULAR  
DETERIORATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 168 12/2 5/3  
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA RESEARCH AND  
ENGINEERING SUPPORT DIV  
A HEURISTIC COMPROMISE BETWEEN PROBABILITY OF SUCCESS  
AND LIMITED RESOURCES. (U)  
DESCRIPTIVE NOTE: RESEARCH PAPER,  
AUG 67 43P TUROFF, MURRAY I  
REPT. NO. RP-P-338  
CONTRACT: DAH15-67-C-0011  
TASK: T-28  
MONITOR: IDA/HQ 67-6135

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DECISION THEORY, MATHEMATICAL  
MODELS), EFFECTIVENESS, MANAGEMENT PLANNING,  
PROBABILITY, UNCERTAINTY, ECONOMICS, COSTS,  
OPTIMIZATION (U)  
IDENTIFIERS: UTILITY FUNCTIONS, DENSITY  
FUNCTIONS (U)

THIS PAPER PROPOSES AN ANALYTICAL TECHNIQUE FOR  
MODELING BY THE ANALYST OF A PARTICULAR DECISION  
SITUATION. EVIDENCE SUPPORTING THE BASIC PROPOSAL,  
PROPERTIES OF THE TECHNIQUE, DISCUSSIONS OF ITS  
POSSIBLE APPLICATIONS, AND EXAMPLES ARE ALSO  
PRESENTED. THE BASIC PROBLEM IS A COMPROMISE  
BETWEEN THE PROBABILITY OF SUCCESS IN A SINGLE TRIAL  
VERSUS THE TOTAL EXPECTED NUMBER OF SUCCESSES OVER  
MANY TRIALS UNDER THE CONSTRAINT OF A LIMITED AND  
UNCERTAIN RESOURCE. THE ANALOGOUS SITUATION OF  
CHOOSING AN OPERATING POINT FOR A SYSTEM WHICH IS A  
COMPROMISE BETWEEN THE EFFECTIVENESS OF THE SYSTEM  
AND ITS EFFICIENCY (EFFECTIVENESS DIVIDED BY  
COST) IS ALSO DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 195 1/3 14/1  
MARINE CORPS WASHINGTON D C  
TACTICAL SUPPORT TRANSPORT AIRCRAFT STUDY. (U)  
AUG 67 174P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TRANSPORT PLANES, MILITARY  
REQUIREMENTS), DECISION MAKING, TACTICAL AIR  
SUPPORT, MARINE CORPS, COST EFFECTIVENESS (U)

THE STUDY IDENTIFIES THE TACTICAL SUPPORT  
TRANSPORT (TST) AIRCRAFT MISSION AND PROVIDES  
SUPPORT FOR SELECTION OF A NEW TST AIRCRAFT PROGRAM  
TO REPLACE THE C117/47/54. IT CONCISELY PRESENTS  
THE COST EFFECTIVENESS ADVANTAGES IN RETAINING THE  
TST AIRCRAFT ORGANIC TO THE MARINE CORPS. IT  
RECOMMENDS RECOGNITION OF THE TST MISSION AND  
RETENTION OF THE CURRENT C117/47/54 AIRCRAFT TO  
PERFORM THE TST MISSION UNTIL A SUITABLE  
REPLACEMENT AIRCRAFT CAN BE ORDERLY PROGRAMMED.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. 000123

AD-657 330            1/3            1/2  
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS  
RESEARCH AND DEVELOPMENT SERVICE  
ECONOMIC AND TECHNICAL FEASIBILITY ANALYSIS OF  
ESTABLISHING AN ALL-WEATHER V/STOL TRANSPORTATION  
SYSTEM. (U)  
DESCRIPTIVE NOTE: MASTER'S THESIS,  
MAY 67 141P            DEL BALZO, JOSEPH M. I  
REPT. NO. FAA-RD-67-36

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH Drexel  
INST. OF TECH., PHILADELPHIA, PA.

DESCRIPTORS: (\*HELICOPTERS, ALL-WEATHER  
AVIATION), (\*AIR TRANSPORTATION, FEASIBILITY  
STUDIES), ECONOMICS, NAVIGATION, SHORT TAKE-  
OFF PLANES, AIR TRAFFIC, AIRPORTS, COSTS (U)

THE NEED AND POTENTIAL OF AN AIRCRAFT HAVING  
VERTICAL AND/OR SHORT TAKE OFF AND LANDING CAPABILITY  
(V/STOL) IS CONSIDERED. THE TECHNICAL AND  
ECONOMIC FEASIBILITY OF ESTABLISHING AN ALL WEATHER  
V/STOL TRANSPORTATION SYSTEM IS EXPLORED.  
TRAFFIC FORECASTS FOR THE V/STOL FOR THE YEARS  
1968 THROUGH 1980 ARE POSTULATED. THE ENROUTE,  
TERMINAL, AND APPROACH AND LANDING NAVIGATION SYSTEM  
REQUIREMENTS FOR THE V/STOL ARE ANALYZED.  
ANTICIPATED OPERATING COSTS AND REVENUE, BASED ON  
AN ANALYSIS OF THE NEW YORK BOSTON AIR SHUTTLE  
ROUTE, ARE PRESENTED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 348 5/9 9/2  
GENERAL LEARNING CORP WASHINGTON D C\*  
A PLAN FOR THE ESTABLISHMENT OF A COMPUTER-AIDED  
INSTRUCTION RESEARCH AND DEVELOPMENT CENTER. (U)  
DESCRIPTIVE NOTE: FINAL REPT. 17 OCT 66-16 JUL 67,  
JUL 67 200P TORR, DONALD V. I  
MOLELLO, SAM I PREVEL, JAMES J. I  
CONTRACT: N00014-67-C-0219  
PROJ: R4303

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PROGRAMMED INSTRUCTION,  
\*COMPUTERS), FEASIBILITY STUDIES, COMPUTER  
PERSONNEL, LEARNING, PERFORMANCE(HUMAN),  
COSTS, TIME SHARING, INPUT-OUTPUT DEVICES,  
PERSONNEL MANAGEMENT (U)  
IDENTIFIERS: COMPUTER-AIDED INSTRUCTION, COMPUTER  
SOFTWARE, COMPUTER HARDWARE (U)

THE REPORT PRESENTS A PLAN FOR THE ESTABLISHMENT OF  
A COMPUTER-AIDED RESEARCH AND DEVELOPMENT  
CENTER. THE PLAN IDENTIFIES COMPUTER SYSTEMS,  
PERSONNEL, AND FACILITY REQUIREMENTS. A FIVE-YEAR  
IMPLEMENTATION SCHEDULE AND A FIVE-YEAR COST ESTIMATE  
ARE PROVIDED. (AUTHOR) (U)

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DC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 788 5/2  
HERNER AND CO WASHINGTON D C  
SYSTEM DESIGN, EVALUATION AND COSTING--IN PLAIN  
ENGLISH. (U)  
MAR 67 17P HERNER, SAUL ;  
CONTRACT: AF 49(638)-1424  
PROJ: AF-9769  
TASK: 976901  
MONITOR: AFOSR 67-1998

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT ADI  
INST. ON INFORMATION SCIENCE, 15 DEC. 66.

DESCRIPTORS: (\*INFORMATION RETRIEVAL, MANAGEMENT  
PLANNING), LIBRARIES, INDEXES, SYSTEMS  
ENGINEERING, OPTIMIZATION, COMPUTERS, COSTS,  
SCHEDULING, DESIGN (U)  
IDENTIFIERS: SYSTEMS ANALYSIS, EVALUATION (U)

THE CONCEPTS OF SYSTEM DESIGN, EVALUATION, AND  
COSTING ARE AMONG THE MOST OFTEN DISCUSSED AND WIDELY  
MISUNDERSTOOD IN THE INFORMATION FIELD. THIS  
REPORT ATTEMPTS, VIA CASE ILLUSTRATIONS, TO DESCRIBE  
AND EXPLAIN THE STEPS AND PROCESSES INVOLVED, SO AS  
TO TAKE SOME OF THE MYSTERY AND WITCHCRAFT OUT OF  
SYSTEMS AND TO FACILITATE THE RETURN OF DESIGN AND  
OPERATION OF INFORMATION SERVICES TO WHERE THEY  
RIGHTFULLY BELONG: TO THE PEOPLE WHO HAVE THE DAY-  
TO-DAY JOB OF MAKING THEM GO AND PERFORM.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 793 9/2 5/1  
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF  
COST REPORTING FOR DEVELOPMENT OF INFORMATION  
PROCESSING SYSTEMS, (U)  
APR 67 83P NELSON, EDWARD A. ;  
FLEISHMAN, THOMAS ;  
REPT. NO. TM-3411  
CONTRACT: F19628-67-C-0132  
MONITOR: ESD TR-67-452

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COMPUTER PROGRAMS, \*COSTS),  
(\*DATA PROCESSING SYSTEMS, COMPUTER PROGRAMS),  
OPERATORS(PERSONNEL), SYSTEMS ENGINEERING,  
PROGRAMMING(COMPUTERS), DEPARTMENT OF  
DEFENSE, MANAGEMENT CONTROL SYSTEMS,  
ORGANIZATIONS, MANAGEMENT PLANNING, MANAGEMENT  
ENGINEERING, COMPUTER PERSONNEL (U)

THE REPORT DESCRIBES A SYSTEM FOR THE COLLECTING  
AND REPORTING ON DATA ON THE RESOURCES EXPENDED IN  
THE PRODUCTION OF COMPUTER PROGRAMS. THE SYSTEM IS  
INTENDED TO: (1) PROVIDE INFORMATION TO  
FACILITATE MANAGEMENT CONTROL DURING THE PROGRESS OF  
A COMPUTER PROGRAMMING EFFORT; (2) BUILD A DATA  
BANK FROM WHICH BETTER COST-ESTIMATING RELATIONSHIPS  
AND PLANNING TOOLS CAN BE DEVELOPED; (3)  
ACCOMPLISH THE ABOVE WITH A MINIMUM OF INTERFERENCE  
WITH OPERATING PERSONNEL. THE REPORT WAS DESIGNED  
TO PROVIDE SAMPLE MATERIALS NECESSARY FOR THE  
IMPLEMENTATION OF COST REPORTING IN ANY ORGANIZATION  
IN WHICH COMPUTER PROGRAMMING IS PERFORMED; IT  
INCLUDES A DESCRIPTION OF THE STEPS THAT CONSTITUTE  
THE COMPUTER PROGRAMMING PROCESS; THE KINDS OF  
PERSONNEL WHO WOULD BE INVOLVED IN THE COST-  
COLLECTION AND -REPORTING SYSTEM; A RECOMMENDED WORK  
FLOW AND SUGGESTED FORMS FOR USE IN DATA COLLECTION  
AND REPORTING; A WORK BREAKDOWN STRUCTURE FOR  
ASSOCIATING COSTS WITH ACTIVITIES; AND A BRIEF  
DISCUSSION OF THE RELATIONSHIP OF THIS SYSTEM WITH  
SEVERAL EXISTING DEPARTMENT OF DEFENSE MANAGEMENT  
PROCEDURES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 941 5/1 5/9 10/1

NAVAL PERSONNEL RESEARCH ACTIVITY SAN DIEGO CALIF  
A PERSONNEL COST DATA BANK FOR USE IN STUDIES OF COST  
AND EFFECTIVENESS. (U)

DESCRIPTIVE NOTE: RESEARCH MEMO.,

AUG 67 54P CONNELLY, MARILEE N. F

REPT. NO. NPRA-SRM-68 3

TASK. PF-0160201H01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COST EFFECTIVENESS,  
PREDICTIONS), (\*NAVAL PERSONNEL, \*COSTS),  
SYSTEMS ENGINEERING, COMPUTERS, FEASIBILITY  
STUDIES, DECISION MAKING, MAN-MACHINE SYSTEMS,  
TRAINING, NAVAL RESEARCH, PERSONNEL  
MANAGEMENT (U)

THE PURPOSE OF THIS STUDY IS TO DEVELOP THE  
STRUCTURE OF A DATA BANK SYSTEM WHICH WILL FACILITATE  
THE ACQUISITION AND COMPUTATION OF PERSONNEL COSTS  
NEEDED FOR COST/EFFECTIVENESS PREDICTIONS. THE  
NAVY'S NEED FOR ADEQUATE PERSONNEL COST  
INFORMATION, ESPECIALLY DURING THE DEVELOPMENT OF NEW  
SYSTEMS, WAS INVESTIGATED. DATA BANK SYSTEMS AND  
COST MODELS WERE EXAMINED. NONE, HOWEVER, COULD  
PROVIDE PREDICTIVE, SYSTEM ORIENTED PERSONNEL COSTS  
UPON WHICH TO BASE FUNCTION ALLOCATION DECISIONS.  
THE CONCEPT OF USING A COMPUTERIZED SYSTEM FOR COST  
ACQUISITION AND COMPUTATION WAS EVALUATED AND FOUND  
FEASIBLE. CONSEQUENTLY, THE STRUCTURE, CONTENTS,  
AND FORMULAE TO BE USED IN SUCH A DATA BANK SYSTEM  
WERE DERIVED AND ARE FORMALLY PROPOSED WITHIN THIS  
REPORT. THE TASKS REQUIRED TO DEVELOP THE SYSTEM  
ARE DELINEATED. ON THE BASIS OF THIS RESEARCH, IT  
IS RECOMMENDED THAT THE PERSONNEL COST DATA BANK  
SYSTEM PROPOSED HEREIN BE FULLY DEVELOPED AS SOON AS  
POSSIBLE. SOLUTIONS TO THE PROBLEMS OF  
ESTABLISHING, MAINTAINING, AND USING THE SYSTEM FOR  
SYSTEM DEVELOPMENT CYCLE SUPPORT SHOULD BE SOUGHT  
DURING THE TIME THE COST DATA SYSTEM IS BEING  
DEVELOPED. THE SYSTEM SHOULD BE IMPLEMENTED,  
MAINTAINED, AND USED AS SOON AS POSSIBLE. (U)

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DLC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 426 5/1 15/3 14/1  
RAND CORP SANTA MONICA CALIF  
SOME COMMENTS ON SYSTEMS ANALYSIS, (U)  
SEP 67 18P FISHER, C. H. I  
REPT. NO. P-3677

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE  
'SYSTEMS ANALYSIS AND COST-EFFECTIVENESS' SESSION OF  
A MORS SYMPOSIUM, STATE DEPT. AUDITORIUM,  
WASHINGTON, OCT 67.

DESCRIPTORS: (\*DEPARTMENT OF DEFENSE,  
MANAGEMENT PLANNING), (\*MANAGEMENT PLANNING,  
OPTIMIZATION), DECISION MAKING, SCHEDULING,  
COSTS, COST EFFECTIVENESS (U)  
IDENTIFIERS: SYSTEMS ANALYSIS (U)

SYSTEMS ANALYSIS DENOTES THE PROCESS OF HELPING TO  
SHARPEN THE INTUITION AND JUDGMENT OF THE  
DECISIONMAKERS THROUGH THE MORE PRECISE STATEMENT OF  
PROBLEMS, THOROUGH IDENTIFICATION (AND OFTEN  
INVENTION) OF THE RELEVANT ALTERNATIVES,  
MEASUREMENT OF THEIR COSTS, IDENTIFICATION OF THEIR  
PROBABLE BENEFITS, EXPLICIT TREATMENT OF THE  
UNCERTAINTIES INVOLVED, AND A SERIOUS ATTEMPT TO  
ESTIMATE THE EFFECTS OF POLICY ALTERNATIVES. THESE  
ARE COMMONSENSICAL IDEAS, BUT ACTUALLY DOING THEM IS  
OFTEN EXTRAORDINARILY COMPLEX AND DEMANDING. MUCH  
PROGRESS HAS BEEN MADE TO DATE, BUT A GREAT DEAL  
REMAINS TO BE DONE IN THE FUTURE. FURTHER PROGRESS  
WILL REQUIRE INGENIOUS THINKING, AND ABOVE ALL JUST  
PLAIN HARD WORK. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 428 5/3  
RAND CORP SANTA MONICA CALIF  
COST-BASED PRICING AND LABOR ELASTICITY, (U)  
SEP 67 24P ARDITTI, FRED D. ;  
PECK, MERTON J. ;  
REPT. NO. P-3438-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH YALE  
UNIV., NEW HAVEN, CONN.

DESCRIPTORS: (\*LABOR, ELASTICITY), (\*WAGES,  
INDUSTRIES), (\*AIRCRAFT INDUSTRY, TRAINING),  
COSTS, ECONOMICS, INEQUALITIES, EMPLOYMENT,  
INDUSTRIAL PROCUREMENT, MONEY, EDUCATION, JOB  
ANALYSIS (U)

EXAMINES THE LABOR ELASTICITY OF THE AIRCRAFT  
INDUSTRY, THAT IS, THE VARIATION IN LABOR INPUTS  
ASSOCIATED WITH SALES VARIATIONS. THE HYPOTHESIS  
IS THAT THE AIRCRAFT INDUSTRY ADJUSTS ITS LABOR  
SUPPLY MORE SLUGGISHLY THAN OTHER MANUFACTURING  
INDUSTRIES BECAUSE MUCH OF THEIR SALES ARE TO THE  
GOVERNMENT THROUGH CONTRACTS THAT CALL FOR PRICES  
BASED ON INCURRED COSTS. SUCH A HYPOTHESIS IS NOT  
PARTICULARLY NOVEL; A COMMON OBSERVATION IS THAT  
DEFENSE PROJECT CANCELATION LEADS TO AN OVERALL  
EMPLOYEE REDUCTION SIGNIFICANTLY LESS THAN THE  
NUMBERS INVOLVED IN THE PROJECT. SECTION II OF  
THIS PAPER USES A SIMPLE PROFIT MAXIMIZATION MODEL TO  
DEMONSTRATE WHY THIS OCCURS. SECTION III  
QUANTIFIES AND TESTS THE MODEL. SECTION IV  
CONSIDERS THE IMPLICATIONS OF RESULTS. (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-656 454 22/1

AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB  
OHIO

AN ASSESSMENT OF THE PRACTICALITY OF ORBITAL  
MAINTENANCE, (U)

AUG 67 23P VAN SCHAIK, PETER N. ;

REPT. NO. AFAPL-CONF-66-3

PROJ: AF-8170

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AIAA CONFERENCE ON  
SPACE PROGRAMS ISSUES OF THE 70'S, SEATTLE, WASH.,  
28-30 AUG 67.

DESCRIPTORS: (\*SPACE MAINTENANCE, FEASIBILITY  
STUDIES), SPACE STATIONS, MANNED SPACECRAFT,  
RELIABILITY, REDUNDANT COMPONENTS, SYSTEMS  
ENGINEERING, MAINTAINABILITY, SPARE PARTS,  
EXTRAVEHICULAR ACTIVITY, COST EFFECTIVENESS (U)

SPACECRAFT AND SPACE STATIONS ORBITING THE EARTH  
FOR LONG PERIODS OF TIME WILL INCUR MANY MALFUNCTIONS  
REQUIRING REDUNDANCY OR ORBITAL MAINTENANCE.  
REDUNDANCY WILL SUFFICE FOR THE SHORTER PERIODS  
WHILE MAINTENANCE BECOMES A NECESSITY IN THE LONG  
RUN. FOR MAINTENANCE TO BECOME A REALITY IT MUST  
BE BOTH SYSTEM AND COST EFFECTIVE. IT WILL NEVER  
BECOME EFFECTIVE UNLESS THE SPACECRAFT IS  
MAINTAINABLE, SPARES ARE INTERCHANGEABLE, AND MAN CAN  
MAKE IN-SPACE REPAIRS. CURRENT PROGRAMS ARE SLOWLY  
ADVANCING THE TECHNOLOGIES BUT A CONCENTRATED,  
COMPREHENSIVE PROGRAM IS NEEDED TO MAKE MAINTENANCE A  
REALITY REASONABLY SOON. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. 000123

AD-658 471            14/1        13/12  
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF  
COST-EFFECTIVENESS ANALYSIS FOR THE FIRE SERVICE: AN  
OVERVIEW. (U)  
DESCRIPTIVE NOTE: PROFESSIONAL PAPER.  
SEP 67    20P        JARRETT, HILTON F. ;  
REPT. NO. SP-2938

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COST EFFECTIVENESS, REVIEWS),  
(\*FIRE SAFETY, MANAGEMENT PLANNING), DECISION  
MAKING, OPTIMIZATION, SUPERVISORY PERSONNEL,  
MODELS(SIMULATIONS), SYSTEMS ENGINEERING,  
ANALYSIS (U)

THE REPORT EXAMINES THE TECHNIQUE OF COST-  
EFFECTIVENESS ANALYSIS, INCLUDING ITS ADVANTAGES AND  
LIMITATIONS, AND DISCUSSES ITS POTENTIAL USEFULNESS  
TO THE FIRE SERVICE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 476 5/11 9/2 5/8  
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF  
APPLICATIONS OF COMPUTERS IN EDUCATION.  
DESCRIPTIVE NOTE: PROFESSIONAL PAPER,  
AUG 67 18P SILBERMAN, HARRY F. ;  
REPT. NO. SP-2909/000/01

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AMERICAN  
MANAGEMENT ASSOCIATION CONFERENCE, AMERICANA  
HOTEL, NEW YORK, AUGUST 9, 1967.

DESCRIPTORS: (\*EDUCATION, COMPUTERS), (\*TIME  
SHARING, \*MAN-MACHINE SYSTEMS),  
PROGRAMMING(COMPUTERS), DIGITAL COMPUTERS,  
COMPUTER PROGRAMS, PERFORMANCE(HUMAN),  
INPUT-OUTPUT DEVICES, COST EFFECTIVENESS  
IDENTIFIERS: COMPUTER-AIDED INSTRUCTION

(U)

(U)

FOUR AREAS OF COMPUTER APPLICATIONS TO EDUCATION  
ARE DESCRIBED: (1) THE COMPUTER AS A SUBJECT OF  
INSTRUCTION; (2) AS A TOOL OF INSTRUCTION,  
(3) AS A RESEARCH AND DEVELOPMENT TOOL; AND  
(4) AS A MANAGEMENT TOOL. THESE APPLICATIONS  
ARE VIEWED IN THE CONTEXT OF AN OPERATIONAL TIME-  
SHARING SYSTEM CONNECTING MANY SCHOOLS WITH A CENTRAL  
COMPUTER. THREE PROBLEM AREAS IN IMPLEMENTING SUCH  
A SYSTEM ARE DISCUSSED: (1) MAN-MACHINE  
COMMUNICATION; (2) COST-EFFECTIVENESS; AND (3)  
USER ACCEPTANCE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 514 1/2 17/7 17/2  
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS  
RESEARCH AND DEVELOPMENT SERVICE  
COST/BENEFIT ANALYSIS OF TELEVISED RADAR FOR GENERAL  
AVIATION. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 67 42P ERICKSON, JUEL E. J  
REPT. NO. FAA-RD-67-54  
PROJ: FAA-197-641-01R

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RADAR NAVIGATION, TELEVISION  
COMMUNICATION SYSTEMS), (\*AVIATION SAFETY, RADAR  
NAVIGATION), AIRBORNE, COSTS, RADAR EQUIPMENT,  
FEASIBILITY STUDIES, AIRPORT RADAR SYSTEMS,  
METEOROLOGICAL RADAR, AIR TRAFFIC CONTROL SYSTEMS (U)

AN ECONOMIC EVALUATION OF THE COSTS AND POTENTIAL  
BENEFITS OF BROADCASTING RADAR INFORMATION TO GENERAL  
AVIATION AIRCRAFT VIA TV RELAY WAS PERFORMED.  
BENEFITS WERE EQUATED TO COSTS OF GENERAL AVIATION  
ACCIDENTS THAT MIGHT BE PREVENTED BY BROADCASTING  
WEATHER DATA, AREA ROUTE INFORMATION OR POSITIONS OF  
OTHER AIRCRAFT. OVER 90 PERCENT OF GENERAL  
AVIATION ACCIDENTS WHICH MIGHT BE PREVENTED BY THE  
USE OF TV RADAR INDICATE WEATHER AS THE PRIMARY  
BENEFIT AREA. THEREFORE IT WAS DETERMINED THAT THE  
MOST PROMISING AREA FOR IMPROVEMENT IS IN PROPERLY  
PRESENTING WEATHER DATA. IT WAS DETERMINED THAT  
BENEFITS OF TV RADAR WOULD EXCEED COSTS IF AT LEAST  
50 PERCENT OF ALL GENERAL AVIATION AIRCRAFT INSTALLED  
EQUIPMENT AND ALSO THAT AT LEAST 50 PERCENT OF  
GENERAL AVIATION ACCIDENT COSTS WOULD BE ELIMINATED  
AS A RESULT. HOWEVER, DUE TO THE PROBABILITY OF  
TOO FEW PARTICIPATING GENERAL AVIATION AIRCRAFT, THE  
STUDY CONCLUDES THAT NO JUSTIFICATION EXISTS FOR  
PURSUING THE TV RADAR CONCEPT FURTHER AT THIS TIME.  
FUTURE IMPROVEMENTS IN RADAR, TRANSMISSION  
CAPABILITY, FREQUENCY AVAILABILITY AND AVAILABILITY  
OF SUITABLE EQUIPMENT FOR GENERAL AVIATION AIRCRAFT  
MAY INDICATE A NEED FOR FURTHER REASSESSMENT AT THAT  
TIME. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 753 1/3 5/8 5/5  
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND  
CONTROL SYSTEMS DIV  
INTEGRATED COCKPIT RESEARCH PROGRAM. APPENDIX  
I. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 67 249P MURPHY, JOHN V. ;  
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;  
HAMSON, ROBERT L. ; BERNBERG, RAYMOND E. ;  
CONTRACT: NONR-4951(00)  
PROJ: NR-213 041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-658 754.

DESCRIPTORS: (\*COCKPITS, SYSTEMS ENGINEERING),  
COST EFFECTIVENESS, HUMAN ENGINEERING, DISPLAY  
SYSTEMS, PILOTS, PERFORMANCE(HUMAN),  
CONTROL, ANALYSIS, MAN-MACHINE SYSTEMS (U)

THE INTEGRATED COCKPIT RESEARCH PROGRAM WAS  
DESIGNED TO DEVELOP A METHODOLOGY FOR AVIONIC SYSTEM  
DESIGN APPLICATION TO AIRCRAFT IN AN ADVANCED TIME  
PERIOD. EMPHASIS WAS PLACED ON TWO MAJOR  
ACTIVITIES. ONE WAS CONCERNED WITH IDENTIFYING THE  
REQUIREMENTS FOR THE OPERATOR/AVIONIC SYSTEM IN THE  
FUTURE TIME PERIOD, AND A SECOND ACTIVITY WAS  
CONCERNED WITH IDENTIFYING THE TECHNOLOGICAL STATE-  
OF-THE-ART THAT WOULD BE AVAILABLE IN THE ADVANCED  
TIME PERIOD TO MEET THOSE REQUIREMENTS. SUCCESSIVE  
ASPECTS OF THE STUDY WERE CONCERNED WITH SYNTHESIZING  
AN AVIONIC SYSTEM, COMPLETING A COST EFFECTIVENESS  
EVALUATION, AND THE PREPARATION OF A COCKPIT MOCKUP.  
APPENDIX I CONTAINS THE FUNCTION FLOW DIAGRAMS  
AND THE MATRIX ANALYSES FOR ALL THREE MISSIONS.  
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 754 1/3 5/8 5/5  
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND  
CONTROL SYSTEMS DIV  
INTEGRATED COCKPIT RESEARCH PROGRAM. APPENDIX  
II. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

JAN 67 93F MURPHY, JOHN V. ;  
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;  
HAMSON, ROBERT L. ; BERNBERY, RAYMOND E. ;  
CONTRACT: NONR-4951(00)  
PROJ: NR-213-041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-658 753.

DESCRIPTORS: (\*COCKPITS, SYSTEMS ENGINEERING),  
COST EFFECTIVENESS, HUMAN ENGINEERING, DISPLAY  
SYSTEMS, PILOTS, AUTOMATIC, DATA PROCESSING  
SYSTEMS, CONTROL, SPECIFICATIONS (U)

THE INTEGRATED COCKPIT RESEARCH PROGRAM WAS  
DESIGNED TO DEVELOP A METHODOLOGY FOR AVIONIC SYSTEM  
DESIGN APPLICATION TO AIRCRAFT IN AN ADVANCED TIME  
PERIOD. EMPHASIS WAS PLACED ON TWO MAJOR  
ACTIVITIES. ONE WAS CONCERNED WITH IDENTIFYING THE  
REQUIREMENTS FOR THE OPERATOR/AVIONIC SYSTEM IN THE  
FUTURE TIME PERIOD, AND A SECOND ACTIVITY WAS  
CONCERNED WITH IDENTIFYING THE TECHNOLOGICAL STATE-  
OF-THE-ART THAT WOULD BE AVAILABLE IN THE ADVANCED  
TIME PERIOD TO MEET THOSE REQUIREMENTS. SUCCESSIVE  
ASPECTS OF THE STUDY WERE CONCERNED WITH SYNTHESIZING  
AN AVIONIC SYSTEM, COMPLETING A COST EFFECTIVENESS  
EVALUATION, AND THE PREPARATION OF A COCKPIT MOCKUP.  
APPENDIX II CONTAINS THE DATA PROCESSING ANALYSIS  
WITH BLOCK DIAGRAMS OF THE MAJOR FUNCTIONAL AREAS.  
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 816 17/2 13/6 5/1 5/4  
MASSACHUSETTS INST OF TECH CAMBRIDGE CENTER FOR  
INTERNATIONAL STUDIES  
COMMUNICATIONS OR TRANSPORT: DECISION-MAKING IN  
DEVELOPING COUNTRIES, (U)  
AUG 67 236P SHAPIRO, PAUL S. ;  
REPT. NO. C/67-8  
CONTRACT: AF 49(638)-1237, ARPA ORDER-427  
PROJ: 920F-9717

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COMMUNICATION SYSTEMS, \*MANAGEMENT  
PLANNING), (\*TRANSPORTATION, \*DECISION  
MAKING), ECONOMICS, POLITICAL SCIENCE, FOREIGN  
AID, COSTS, ROADS, CONSTRUCTION, TELEPHONE  
COMMUNICATION SYSTEMS, RADIO COMMUNICATION SYSTEMS,  
ATTITUDES (U)

COMPARISON IS MADE OF THE USES OF INVESTMENT IN  
TRANSPORT AND IN COMMUNICATIONS FOR DEVELOPING  
COUNTRIES. A METHOD FOR INVESTMENT DECISION-MAKING  
IS PROPOSED, AND RELEVANT DATA ARE PRESENTED AND  
ANALYZED. IT IS HYPOTHESIZED THAT IN ACHIEVING  
DEVELOPMENT GOALS TRANSPORT AND COMMUNICATIONS MAY BE  
SUBSTITUTABLE OR AT LEAST COMPLEMENTARY. NATIONAL  
INVESTMENT STRATEGIES ARE SEEN TO DEPEND ON  
COMMUNIST OR NON-COMMUNIST IDEOLOGY, ON THEORIES  
OF ECONOMIC PLANNING, ON SITUATIONAL CONDITIONS, AND  
ON METHODS OF ANALYSIS. THE CONSTRUCTION OF RURAL  
ROADS IS POSITED AS THE MAJOR TRANSPORT INVESTMENT  
FOR DEVELOPING COUNTRIES IN THE FUTURE. IT IS  
SUGGESTED THAT INCREASED RATIONALITY IN DECISION-  
MAKING IN THE TRANSPORT AND COMMUNICATIONS SECTOR IS  
POSSIBLE THROUGH THE APPLICATION OF COST-BENEFIT  
ANALYSIS AT THE VILLAGE LEVEL. THIS IS SEEN TO  
REQUIRE THE COLLECTION OF COST AND DESCRIPTIVE DATA  
FOR A RANGE OF COMMUNICATIONS MEDIA AND FOR VARIOUS  
TYPES OF ROADS, AS WELL AS INCREASED KNOWLEDGE OF THE  
BENEFITS THEY AFFORD. A MODEL IS PROPOSED FOR THE  
STAGING OF INVESTMENT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 841 14/2 21/A.2  
AIR FORCE MISSILE DEVELOPMENT CENTER HOLLOMAN AFB N MEX  
DIRECTORATE OF TEST TRACK  
CRITERIA FOR SELECTING SOLID ROCKET MOTORS AS TRACK  
TEST PROPULSION, (U)  
JUN 67 47P RASMUSSEN, HANS J. I  
MONITOR: MDC TR-67-76

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ROCKET-PROPELLED SLEDS, \*ROCKET  
MOTORS(SOLID PROPELLANT)), SELECTION,  
EQUATIONS OF MOTION, PROPULSION, STANDARDS,  
DESIGN, COST EFFECTIVENESS,  
PERFORMANCE(ENGINEERING), ACCELERATION (U)

CLOSED FORM SOLUTIONS OF THE SIMPLIFIED EQUATION OF  
MOTION OF A ROCKET SLED ARE USED TO DEFINE SPECIFIC  
CHARACTERISTICS GOVERNING THE APPLICABILITY OF  
INDIVIDUAL SOLID ROCKET MOTORS FOR TRACK TEST  
PROPULSION PURPOSES. SOME OF THE INTERACTIONS  
BETWEEN MOTOR PERFORMANCE PARAMETERS, SLED DESIGN  
CONSIDERATIONS, AND TRACK LENGTH CONSTRAINTS ARE  
REVIEWED. CRITERIA ARE DEVELOPED FOR DETERMINING  
APPLICABILITY RANGES AND PERFORMANCE LIMITS OF  
VARIOUS ROCKET UNITS, AND TO ARRIVE AT A BASIS FOR  
COMPARING THE RELATIVE COST EFFECTIVENESS OF  
COMPETING MOTORS FOR ROCKET SLED OPERATION.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 329 22/2 15/5 5/1  
AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL  
OPERATIONS  
USE OF AN EMPIRICAL PRODUCT-ORIENTED COST DATA BANK  
FOR PREDICTING AND NEGOTIATING FUTURE SATELLITE  
SYSTEM COSTS. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT. 1 JUL 63-12 JUN 67,  
JUN 67 29P SILVER, HYMAN I  
REPT. NO. TR-1001(2573-34)-1  
CONTRACT: AF-04(695)-1001  
MONITOR: SSD TR-67-150

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COMMUNICATION  
SATELLITES(ACTIVE); \*COSTS); GOVERNMENT  
PROCUREMENT; MANAGEMENT PLANNING; DEPARTMENT OF  
DEFENSE; VALUE ENGINEERING; RESEARCH PROGRAM  
ADMINISTRATION (U)  
IDENTIFIERS: PERT COST SYSTEM; AEROSPACE  
INDUSTRY (U)

THIS REPORT OUTLINES AND ANALYZES ONE APPROACH  
TOWARD SOLVING THE GENERALIZED PROBLEM OF POOR COST  
ESTIMATING PROCEDURES WITHIN THE AEROSPACE INDUSTRY.  
THIS APPROACH DEALS WITH THE REPLACEMENT OF THE  
TRADITIONAL 'FUNCTIONAL' SYSTEM OF ESTIMATING,  
NEGOTIATING AND REPORTING COSTS WITH THE PRODUCT OR  
END ITEM ORIENTED TECHNIQUE. SPECIFICALLY, THE  
MILITARY COMSAT IDCSP PROGRAM END ITEM COST  
SYSTEM IS DESCRIBED, AND THE MANNER BY WHICH IT WAS  
USED TO FORM A COMPREHENSIVE COST DATA BANK AND THE  
SUBSEQUENT USAGE OF THE DATA BANK TO ESTIMATE NEW  
PROGRAM COSTS ARE ANALYZED. IT ALSO DESCRIBES THE  
BENEFITS ACCRUING TO THE UNDERSTANDING OF BOTH  
PARTIES IN NEGOTIATING CONTRACT COSTS THAT HAVE BEEN  
ESTIMATED ON A DETAILED PRODUCT ORIENTED BASIS.  
THE ACTUAL RE-ESTIMATING PROCEDURES THAT WERE  
UTILIZED ON A CURRENT COMSAT PROGRAM ARE DESCRIBED  
IN DETAIL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 356 14/1 15/7 5/1  
RAND CORP SANTA MONICA CALIF  
PROJECT COST ESTIMATING,  
SEP 67 34P PETRUSCHELL, R. L. ;  
REPT. NO. P-3687

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT  
MANAGEMENT STUDIES GROUP OF THE ROYAL  
AERONAUTICAL SOCIETY IN JUN 67.

DESCRIPTORS: (\*COSTS, \*DECISION MAKING),  
(\*COST EFFECTIVENESS, MANAGEMENT PLANNING),  
(\*MILITARY REQUIREMENTS, ADVANCED PLANNING),  
ECONOMICS, WEAPON SYSTEMS, GUIDED  
MISSILES (UNDERWATER-TO-SURFACE), AIRCRAFT,  
MILITARY TACTICS, OPTIMIZATION  
IDENTIFIERS: SYSTEMS ANALYSIS

(U)

(U)

ONE PLACE WHERE COST ESTIMATING HAS, IN RECENT  
YEARS, BEEN ALLOWED TO PLAY ITS PROPER ROLE IS IN  
MILITARY LONG-RANGE PLANNING, AND THE REWARDS HAVE  
INDEED BEEN GREAT. THE GENERAL PHILOSOPHY OF THE  
MILITARY PLANNER AND THE CONCEPTS AND METHODS OF THE  
COST ESTIMATOR THAT HAVE PERMITTED THIS TO HAPPEN ARE  
DISCUSSED IN THE FIRST PART OF THIS PAPER. IN THE  
SECOND PART, AN EXAMPLE OF A COST ANALYSIS IN SUPPORT  
OF A MILITARY PLANNING PROBLEM IS PRESENTED. THE  
EXAMPLE POINTS UP THE FACT THAT COST ESTIMATING CAN  
BE AN INTELLECTUALLY STIMULATING ACTIVITY WORTHY OF  
THE APPLICATION OF THE BEST ANALYTICAL SKILLS  
AVAILABLE; AND SECOND, THAT IT CAN PROVIDE USEFUL  
ANSWERS TO DIFFICULT AND IMPORTANT QUESTIONS EVEN  
WHEN UNCERTAINTY IS GREAT AND QUANTIFICATION IS  
DIFFICULT.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 373 5/3 15/5 1/3  
RAND CORP SANTA MONICA CALIF  
AIRCRAFT CO-PRODUCTION AND PROCUREMENT STRATEGY, (U)  
MAY 67 236P HALL, G. R. JOHNSON, R.  
E. J.  
REPT. NO. R-450-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT INDUSTRY, \*JAPAN),  
(\*INDUSTRIAL PRODUCTION, AIRCRAFT), (\*ARMED  
FORCES PROCUREMENT, AIRCRAFT), FOREIGN AID,  
CONTRACTS, ECONOMICS, COSTS, COMMERCE,  
PATROL PLANES, JET FIGHTERS, JET TRAINING  
PLANES (U)  
IDENTIFIERS: F-86 AIRCRAFT, F-104 AIRCRAFT, P-2  
AIRCRAFT, T-33 AIRCRAFT (U)

AN ANALYSIS OF THE CO-PRODUCTION IN 1955-1964 OF  
FOUR U.S. MILITARY AIRCRAFT--THE T-33A,  
P2V-7, F-86F, AND F-104J--BY JAPANESE  
FIRMS. THE PROCESS OF TRANSFERRING THE REQUIRED  
MANUFACTURING TECHNOLOGY IS EXAMINED. FOR THE F-  
104J THE COSTS OF TRANSFER ARE ALSO ANALYZED.  
THESE COSTS WERE LOWER THAN EXPECTED--SUFFICIENTLY  
SO, THAT WHEN COMBINED WITH JAPAN'S LABOR-COST  
ADVANTAGE, THE JAPANESE-BUILT F-104JS COST AT  
LEAST 10 PERCENT LESS THAN LOCKHEED'S LIKELY  
SELLING PRICE. CO-PRODUCTION'S AID TO THE  
DEVELOPMENT OF JAPAN'S AVIATION INDUSTRY AND TO  
MAKING THE ACQUISITION OF MILITARY AIRCRAFT  
POLITICALLY FEASIBLE HAS IMPORTANT IMPLICATIONS FOR  
FOREIGN AID POLICY. CO-PRODUCTION ALSO SUGGESTS  
THAT CONVENTIONAL VIEWS ABOUT THE COSTS AND BENEFITS  
OF REPROCURING WEAPON SYSTEMS ONLY FROM THE DEVELOPER  
MAY BE ERRONEOUS. A POLICY OF SEPARATING PROGRAMS  
FOR CONTRACTING PURPOSES COULD GREATLY EXPAND THE  
ROLE OF COMPETITION AND RELIANCE ON MARKET-GENERATED  
PRICES IN WEAPON SYSTEM PROCUREMENT. THE BENEFITS  
OF SUCH A POLICY COULD BE SUBSTANTIAL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 625 5/2  
HERNER AND CO WASHINGTON D C  
STUDY OF DOCUMENTATION PROCEDURES AND  
MECHANISMS.  
DESCRIPTIVE NOTE: FINAL SCIENTIFIC REPT.,  
AUG 67 10P HERNER, SAUL ;  
CONTRACT: AF 49(638)-1424  
PROJ: AF-9769  
TASK: 976901  
MONITOR: AFOSR 67-2248

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DOCUMENTATION, REVIEWS),  
COSTS, PSYCHOMETRICS, DATA PROCESSING SYSTEMS,  
SCIENTIFIC RESEARCH, DESIGN, ANALYSIS,  
EFFECTIVENESS

(U)

THE WORK AND PUBLICATIONS DISCUSSED ARE ON THE  
FOLLOWING TOPICS: ASLIB-CRANFIELD EVALUATION  
TECHNIQUES; SYSTEM DESIGN, EVALUATION, AND COSTINGS;  
REVIEW OF USER STUDIES; MACHINE ANALYSIS OF  
PSYCHIATRIC INTERVIEWS; FUNCTIONAL ASPECTS OF  
INFORMATION NETWORKS; INFORMATION-RELATED EQUIPMENT.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 653 15/5 12/2  
TECHNICAL UNIV OF DENMARK LINBY INST OF MATHEMATICAL  
STATISTICS AND OPERATIONS RESEARCH  
THE MANY-PRODUCT CARGO LOADING PROBLEM, (U)  
SEP 67 11P PRUZAN, PETER MARK ;  
JACKSON, J. T. ROSS ;

UNCLASSIFIED REPORT  
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH  
LOGISTICS QUARTERLY VOL N3 P381-90 SEP 1967.  
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
OPERATIONS ANALYSIS CORP., COPENHAGEN  
(DENMARK).

DESCRIPTORS: (\*CARGO, HANDLING), (\*CARGO  
VEHICLES, SCHEDULING), (\*DYNAMIC PROGRAMMING,  
TRANSPORTATION), ALGORITHMS, COSTS,  
OPTIMIZATION, MANAGEMENT PLANNING, OPERATIONS  
RESEARCH, APPROXIMATION(MATHEMATICS),  
NUMERICAL METHODS AND PROCEDURES (U)

AN ALGORITHM, BASED UPON DYNAMIC PROGRAMMING, IS  
DEVELOPED FOR A CLASS OF FIXED-COST CARGO LOADING  
PROBLEMS. THE PROBLEMS CAN BE FORMULATED AS  
INTEGER PROGRAMMING PROBLEMS, BUT CANNOT BE  
EFFICIENTLY SOLVED AS SUCH BECAUSE OF COMPUTATIONAL  
DIFFICULTIES. THE ALGORITHM DEVELOPED HAS PROVED  
TO BE VERY EFFICIENT IN AN ACTUAL OPERATIONS RESEARCH  
STUDY INVOLVING OVER 500 DIFFERENT CARGO ITEMS, MORE  
THAN 40 POSSIBLE STOPS AND SEVERAL TYPES OF  
TRANSPORTATION VEHICLES. A NUMERICAL ILLUSTRATION  
IS PROVIDED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 729 15/5 14/1 12/2  
RAND CORP SANTA MONICA CALIF  
COST AND EFFECTIVENESS IMPACTS OF ORDER QUANTITY  
CHANGES, (U)  
OCT 67 36P HOUGHTEN, JAMES W. ;  
FEPT. NO. RM-4796-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR FORCE PROCUREMENT, \*COST  
EFFECTIVENESS), (\*INVENTORY ANALYSIS, AIR FORCE  
PROCUREMENT), ECONOMICS, OPTIMIZATION, COSTS,  
SCHEDULING, MANAGEMENT PLANNING, MATHEMATICAL  
MODELS, PREDICTIONS, LOGISTICS (U)

THE REPORT DESCRIBES TWO METHODS FOR ESTIMATING THE  
INCREASED COSTS OF SETTING A MINIMUM REPROCUREMENT  
QUANTITY OF ONE YEAR'S WORTH OF STOCK FOR AIR  
FORCE ECONOMIC ORDER QUANTITY ITEMS WHOSE  
ANNUAL ISSUES ARE IN THE \$1,000 TO \$10,000  
CATEGORY. ONE METHOD REQUIRES THAT ITEMS BE  
SPECIFIED BY THEIR ANNUAL ISSUE VALUE; THE OTHER THAT  
THEY BE SPECIFIED BOTH BY ANNUAL DEMAND RATES AND  
UNIT PRICES. ALTHOUGH MORE DIFFICULT AND EXPENSIVE  
TO USE, THE SECOND METHOD IS MORE ACCURATE,  
PARTICULARLY FOR ITEMS WITH LOW ANNUAL DEMAND RATES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 731 14/1 15/5 5/1  
RAND CORP SANTA MONICA CALIF  
DEFENSE PROCUREMENT AND PUBLIC UTILITY  
REGULATION,  
SEP 67 53P HALL, GEORGE R. ;  
REPT. NO. RM-5285-PR  
CONTRACT: F44620-67-C-0045

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ARMED FORCES PROCUREMENT,  
CONTROL), (\*INDUSTRIES, CONTROL), (\*COST  
EFFECTIVENESS, CONTROL SYSTEMS), BUDGETS,  
DEPARTMENT OF DEFENSE, MANAGEMENT PLANNING,  
WEAPON SYSTEMS, COSTS

(U)

IDENTIFIERS: PUBLIC UTILITIES, PROFIT,  
REGULATION, SYSTEMS ANALYSIS

(U)

THIS STUDY COMPARES THE CONTROL OF PROCUREMENT  
PRICES AND PROFITS WITH THE SYSTEM APPLIED TO PUBLIC  
UTILITIES. THE POSSIBLE APPLICATION OF PUBLIC  
UTILITY REGULATION TO WEAPON SYSTEM PRODUCERS IS ALSO  
CONSIDERED BUT REJECTED. DESPITE DIFFERENCES IN  
THE REASONS FOR REGULATION AND IN PROFIT  
DETERMINATION, BOTH SYSTEMS BASE PRICES AND PROFITS  
ON COSTS. SINCE THE MAJOR PROCUREMENT PROBLEMS  
STEM FROM THE COST-BASED NATURE OF PROFITS, THEY  
WOULD NOT BE SOLVED BY PUBLIC UTILITY REGULATION.  
POLICY EMPHASIS SHOULD BE ON MINIMIZING THE NEED  
FOR REGULATION BY ENCOURAGING COMPETITION THROUGH  
TOTAL-PROGRAM-PACKAGE PROCUREMENTS, SECOND-SOURCING  
AND OTHER ATYPICAL ACQUISITION STRATEGIES.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 800 13/2 13/13 14/1  
STANFORD RESEARCH INST MENLO PARK CALIF  
SHELTER WATER SUPPLY STUDY: COST IMPLICATIONS OF  
EMERGENCY SOURCES. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 67 186P JENSEN, GORDON F. ;  
CONTRACT: DAHC20-67-C-0136  
PROJ: SRI-MU-6300-170

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FALLOUT SHELTERS, \*CIVIL DEFENSE  
SYSTEMS), (\*WATER SUPPLIES, SOURCES), COSTS,  
WATER TANKS, WATER WELLS, TANKS(CONTAINERS),  
COST EFFECTIVENESS, RADIOACTIVE FALLOUT,  
SURVIVAL (U)

THE STUDY COMPARES SELECTED ALTERNATIVE METHODS OF  
SUPPLYING EMERGENCY DRINKING WATER TO INHABITANTS OF  
FALLOUT SHELTERS. THE RESPECTIVE COSTS AND SOME OF  
THE QUALITATIVE CONSIDERATIONS OF EACH SYSTEM WERE  
INVESTIGATED, WITH PARTICULAR EMPHASIS ON COMPARISONS  
OF MUNICIPAL SYSTEMS, TRAPPED WATER, WATER  
CONTAINERS, TANKS, AND WELLS. THIS STUDY REPORTS  
ON THE TRADEOFFS BETWEEN COST, SHELTER SIZE, AND WELL  
DEPTH OF EMERGENCY WATER SOURCES. THE TRADEOFFS  
ARE INVESTIGATED BY A SERIES OF COST-SENSITIVITY  
CURVES. THE CAPABILITIES AND DETAILS OF THE  
MUNICIPAL WATER SOURCES FOR TWO SAMPLE CITIES ARE  
ALSO REPORTED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 993 12/2 13/8 5/1 15/5

STANFORD UNIV CALIF  
PRODUCTION SMOOTHING WITH STOCHASTIC DEMAND AND  
RELATED INVENTORY PROBLEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

AUG 67 173P SOBEL, MATTHEW J. ;

REPT. NO. TK-96

CONTRACT: NONR-225(53), NSF-GP-3739

PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PRODUCTION CONTROL, \*INVENTORY  
ANALYSIS), (\*MANAGEMENT PLANNING, SCHEDULING),  
(\*STOCHASTIC PROCESSES, MATHEMATICAL MODELS),  
COSTS, OPTIMIZATION, DECISION MAKING,  
EMPLOYMENT, UNCERTAINTY, ALGORITHMS,  
STATISTICAL PROCESSES, DYNAMIC PROGRAMMING  
IDENTIFIERS: PRODUCTION SMOOTHING

(U)

(U)

THE DYNAMIC SINGLE PRODUCT INVENTORY PROBLEMS  
TREATED HERE HAVE COSTS THAT DEPEND ON CHANGES IN  
PRODUCTION RATES AS WELL AS ON THE RATES THEMSELVES  
AND ON INVENTORY LEVELS. ALL BUT ONE OF THE MODELS  
HAVE STOCHASTIC DEMAND AND BACKORDER EXCESS DEMAND.  
A DISCRETE TIME MODEL IN WHICH SMOOTHING COSTS ARE  
PROPORTIONAL TO THE DIFFERENCE BETWEEN PRODUCTION  
RATES IN SUCCESSIVE PERIODS IS SHOWN TO HAVE AN  
OPTIMAL POLICY IN WHICH PRODUCTION DECREASES AS  
INVENTORY INCREASES; UNIFORM BOUNDS ARE GIVEN FOR THE  
OPTIMAL POLICY PARAMETER VALUES. THE MODEL  
GENERALIZES TO ONE IN WHICH EMPLOYMENT LEVEL AND  
PRODUCTION RATE ARE SEPARATE VARIABLES. A  
GENERALIZED STATIONARY ANALYSIS IS GIVEN FOR THE  
SIMPLER CASE. WHEN UNITS ARE MADE SEQUENTIALLY IN  
TIME AND DEMAND IS A RENEWAL PROCESS, THE PRESENCE OF  
SMOOTHING COSTS LEADS TO OPTIMAL POLICIES FOR THE  
MINIMIZATION OF AVERAGE COST PER UNIT TIME WHICH ARE  
BASED ON ONLY TWO PARAMETERS AND WHICH ARE EASILY  
ADMINISTERED. ANALOGOUS RESULTS ARE OBTAINED FOR A  
SIMILAR DISCRETE TIME MODEL AND THE RESULTING  
STATIONARY DISTRIBUTIONS OF STATE VARIABLES IS GIVEN  
FOR THE CASES OF DEMAND BEING A POISSON PROCESS AND  
EITHER CONSTANT OR EXPONENTIALLY DISTRIBUTED  
PRODUCTION TIMES. (AUTHOR)

(U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 118 14/1 10/2 5/3  
RAND CORP SANTA MONICA CALIF  
THE GRAND CANYON CONTROVERSY: LESSONS FOR FEDERAL  
COST-BENEFIT PRACTICES, (U)  
OCT 57 26P CARLIN, ALAN ;  
REPT. NO. P-3505-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COST EFFECTIVENESS, UNITED STATES GOVERNMENT), (\*DAMS, ARIZONA), COSTS, ECONOMICS, POWER PLANTS(ESTABLISHMENTS), ELECTRIC POWER PRODUCTION, NATURAL RESOURCES, CALIFORNIA, NEVADA, UTAH, TRANSMISSION LINES, POWER REACTORS (U)  
IDENTIFIERS: COST-BENEFIT ANALYSIS, MARBLE CANYON PROJECT, INTEREST RATES (U)

THIS REVIEW AND ANALYSIS OF THE ECONOMIC CONTROVERSY OVER THE PROPOSED GRAND CANYON DAMS HAS POINTED OUT SEVERAL FEDERAL EVALUATION PRACTICES NOT FULLY BROUGHT OUT IN PREVIOUS ANALYSES OF SENATE DOCUMENT 97: (1) THE USE OF THE DOCUMENT'S 'MOST LIKELY' WORDING TO EXCLUDE LOWER COST ALTERNATIVES FROM CONSIDERATION; (2) THE INCLUSION OF HIGHER INTEREST RATES AND TAXES IN EVALUATING A PRIVATE ALTERNATIVE TO A PUBLIC PROJECT; (3) USE OF UNREASONABLE ASSUMPTIONS WITH REGARD TO THE TRANSMISSION COSTS OF ALTERNATIVES; (4) THE PARTICULARLY INADEQUATE INTEREST RATES USED IN COMPUTING THE COST OF PROPOSED PROJECTS DURING PERIODS WHEN RATES ARE RELATIVELY HIGH COMPARED TO PREVIOUS DECADES. THE SIGNIFICANCE OF THE GRAND CANYON CONTROVERSY FOR THE EVALUATION OF FEDERAL WATER PROJECTS GOES BEYOND UNDERLINING THE INADEQUACIES OF SENATE DOCUMENT 97, HOWEVER, TO RAISE THE QUESTION OF WHETHER IT IS POSSIBLE FOR FEDERAL WATER AGENCIES TO OBJECTIVELY EVALUATE PROJECTS WHICH THEY WOULD LATER BE ASKED TO BUILD. (U)

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DJC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 328 15/7 12/2 14/1  
RESEARCH ANALYSIS CORP MCLEAN VA  
A FORMULATION OF GROUND COMBAT MISSIONS IN  
MATHEMATICAL PROGRAMMING FORM.  
DESCRIPTIVE NOTE: TECHNICAL PAPER,  
JUL 67 35P TIEDE, ROLAND V. ;  
REPT. NO. RAC-TP-265  
CONTRACT: DA-44-188-ARO-1

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DATA PROCESSING SYSTEMS, COST  
EFFECTIVENESS), (\*TACTICAL WARFARE,  
\*MATHEMATICAL PROGRAMMING), (\*COST  
EFFECTIVENESS, TACTICAL WARFARE), MATHEMATICAL  
MODELS, COMMAND + CONTROL SYSTEMS,  
EFFECTIVENESS, OPTIMIZATION

(U)

AN ATTEMPT TO DEVELOP GENERAL METHODS FOR MEASURING  
COST AND EFFECTIVENESS IMPLICATIONS OF ADDING  
AUTOMATIC DATA PROCESSING TO COMMAND CONTROL SYSTEMS  
FOR GROUND COMBAT REQUIRED THE DEVELOPMENT OF  
TECHNIQUES FOR MARGINAL-EFFECTIVENESS ANALYSIS.  
ONE NECESSARY STEP FOR SUCH ANALYSIS WAS THE  
FORMULATION OF GROUND COMBAT MISSIONS TO PERMIT  
MEASUREMENT OF MARGINAL MISSION PERFORMANCE.  
EXAMINATION OF TYPICAL COMBAT MISSIONS IDENTIFIES  
THREE DIMENSIONS: RESOURCES, TIME, AND AREA  
CONTROLLED BY A MILITARY FORCE. TYPICAL MISSIONS  
ARE RELATED TO A CLOSED CONTINUUM OF TACTICAL  
POSTURES ORDERED ON THE BASIS OF RELATIVE POTENTIAL  
ENERGY AND MOVEMENT RATE. THREE CLASSES OF  
INCREASINGLY SEVERE CONSTRAINTS ARE IDENTIFIED AND  
ASSOCIATED WITH DECREASING POTENTIAL ENERGY. TWO  
OBJECTIVE FUNCTIONS ARE IDENTIFIED: MAXIMIZATION  
OF RATE OF ADVANCE FOR HIGH-ENERGY POSTURES AND  
MINIMIZATION OF RATE OF RESOURCE EXPENDITURE FOR LOW-  
ENERGY POSTURES. THE QUANTIFIABILITY OF THE THREE  
DIMENSIONS OF MISSION SPACE IS EXAMINED, AND  
DIFFICULTIES IN AGGREGATING DIFFERENT CLASSES OF  
RESOURCES AND TERRAIN OF VARYING TACTICAL VALUE ARE  
RECOGNIZED. A MEASURE FOR ASSESSING THE DEGREE OF  
CONTROL OVER AN AREA BY A MILITARY FORCE IS  
POSTULATED AND TESTED IN A SIMPLE MATHEMATICAL MODEL.  
RELATING THE PERFORMANCE OF A MIX OF MILITARY  
MISSIONS TO COMBAT EFFECTIVENESS IS DISCUSSED.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 392 5/10

RUTGERS - THE STATE UNIV NEW BRUNSWICK N J  
COST, PROFIT, CERTAINTY AND FAILURE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

OCT 67 17P STREUFERT, SIEGFRIED J

KLIGER, SUSAN C. :

REPT. NO. TR-6

CONTRACT: N00014-67-A-0115

PROJ: NR-177-911

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH PURDUE  
UNIV., LAFAYETTE, IND.

DESCRIPTORS: (\*GROUP DYNAMICS, \*DECISION  
MAKING), (\*BARGAINING, SOCIAL PSYCHOLOGY),  
ECONOMICS, PROBABILITY, GAME THEORY, COSTS,  
GAME THEORY, PERFORMANCE(HUMAN), STATISTICAL  
ANALYSIS

(U)

DYAD DECISION MAKING TEAMS SPENT SEVEN CONSECUTIVE  
HALF HOUR PERIODS PLAYING AN EXPERIMENTAL INTERNATIONAL  
GAME CONTAINING TACTICAL, ECONOMIC, NEGOTIATION AND  
INTELLIGENCE COMPONENTS. TEAMS RECEIVED SEVEN  
INFORMATIVE MESSAGES PER ONE/HALF HOUR PERIOD.  
INCREASING FAILURE WAS INDUCED BY INCREASING THE  
PROPORTION OF FAILURE TO NEUTRAL MESSAGES OVER  
PERIODS. AFTER EACH ONE/HALF HOUR PERIOD, SUBJECTS  
ESTIMATED THEIR PRESENT AND ANTICIPATED 'COST',  
'PROFIT' AND 'CERTAINTY' LEVELS ON RATING SCALES.  
RATINGS WERE ANALYZED IN A THREE WAY WITHIN ANOV  
DESIGN. A SIGNIFICANT TRIPLE INTERACTION WAS  
OBTAINED. THE RESULTS SUGGEST THAT GENERALLY  
ANTICIPATED LEVELS OF 'PSYCHO-ECONOMIC' VARIABLES ARE  
ABOVE PRESENT LEVELS, THAT COST AND PROFIT ARE NOT  
INVERSE UNIDIMENSIONAL EFFECTS, AND THAT ESTIMATES OF  
COST FOLLOW REAL FAILURE LEVELS MOST CLOSELY WHILE  
CERTAINTY ESTIMATES DO NOT DROP IMMEDIATELY AND  
PROFIT ESTIMATES DO NOT DROP UNTIL THE FAILURE LEVELS  
ARE RATHER HIGH.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 537 5/3 5/9 5/4  
HOWARD UNIV WASHINGTON D C DEPT OF ECONOMICS  
MILITARY TRANSFER OF TECHNOLOGY: INTERNATIONAL  
TECHNO-ECONOMIC TRANSFERS VIA MILITARY BY-PRODUCTS  
AND INITIATIVE BASED ON CASES FROM JAPAN AND OTHER  
PACIFIC COUNTRIES, (U)  
MAR 67 278P SPENCER, DANIEL L. I  
CONTRACT: AF-AFOSR-533-67  
PROJ: AF-9779  
TASK: 977902  
MONITOR: AFOSR 67-0231

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ECONOMICS, \*JAPAN), (\*ARMED  
FORCES(UNITED STATES), \*TRANSFER OF  
TRAINING, TAIWAN, SOUTH KOREA, COST  
EFFECTIVENESS, FOREIGN AID, EMPLOYMENT, CIVILIAN  
PERSONNEL, FOREIGN POLICY, INDUSTRIES, ARMED  
FORCES PROCUREMENT, INDUSTRIAL PRODUCTION,  
CONTRACTS, MILITARY PERSONNEL (U)  
IDENTIFIERS: MILITARY ASSISTANCE (U)

THE TRANSFER OF TECHNOLOGY THROUGH MILITARY AND  
RELATED CHANNELS IS DISCUSSED. CASE STUDIES ARE  
DRAWN FROM JAPAN, TAIWAN, AND KOREA. THE  
MATERIALS CONSTITUTE A FIRST ATTEMPT TO BULLDOZE  
THROUGH A NEW DIMENSION IN COST/BENEFIT ASSESSMENTS  
OF MILITARY ACTIVITY OVERSEAS. THE REPORT  
CONCLUDES THAT A DOLLAR SPENT ON MILITARY ASSISTANCE  
MAY PRODUCE AS MUCH BENEFIT AS, OR MORE THAN, A  
DOLLAR SPENT ON ECONOMIC ASSISTANCE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 659 14/1 15/5 5/1  
LOGISTICS MANAGEMENT INST WASHINGTON D C  
LIFE CYCLE COSTING IN INDUSTRY. (U)  
SEP 67 18P  
CONTRACT: SD-271  
TASK: 67-21

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GOVERNMENT PROCUREMENT, DEPARTMENT  
OF DEFENSE), (\*DEPARTMENT OF DEFENSE,  
CONTRACTS), (\*COST EFFECTIVENESS,  
LOGISTICS), ECONOMICS, OPTIMIZATION, ARMED  
FORCES SUPPLIES, MANAGEMENT PLANNING, LIFE  
EXPECTANCY, DECISION MAKING, MAINTENANCE,  
REVIEWS (U)  
IDENTIFIERS: LIFE CYCLE COSTING (U)

THE WIDESPREAD USE OF LIFE CYCLE COSTING IN  
NON-DEFENSE INDUSTRY AND THE ENTHUSIASM EXHIBITED  
TOWARD IT BY COMPANY OFFICIALS GIVE STRONG SUPPORT TO  
THE VALUE AND THE VALIDITY OF THE LIFE CYCLE  
COST CONCEPT. INDUSTRY'S ABILITY TO OVERCOME  
PROBLEMS ASSOCIATED WITH LIFE CYCLE COSTING  
PROVIDES ASSURANCE TO THE DOD AS TO THE  
USEFULNESS OF THE CONCEPT. THE ENVIRONMENT FOR  
LCC IN INDUSTRY VARIES SO SUBSTANTIALLY FROM THAT  
IN THE DOD THAT MOST PRACTICES USED IN INDUSTRY  
ARE NOT APPLICABLE TO THE GOVERNMENT ENVIRONMENT.  
INDUSTRY HAS PLACED MUCH MORE EMPHASIS ON THE  
METHODS OF ANALYZING COST ESTIMATES THAN HAS THE  
DOD. WHILE INDUSTRY HAS DEVELOPED DISCOUNTED  
RETURN ON INVESTMENT METHODS, DOD TEST  
PROCUREMENTS HAVE MERELY ADDED UP THE COSTS AND  
AWARDED ON THE BASIS OF LOWEST TOTAL COST. THE  
GOVERNMENT COULD LEARN FROM INDUSTRY EXPERIENCE IN  
THIS PARTICULAR AREA EVEN THOUGH THE OBJECTIVES OF  
PROFIT MAXIMIZATION AND COST MINIMIZATION ARE  
DIFFERENT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 905 5/1  
RAND CORP SANTA MONICA CALIF  
THE ROLE OF QUANTITATIVE ANALYSIS AND THE COMPUTER IN  
PROGRAM BUDGETING, (U)  
OCT 67 8P NOVICK, DAVID I  
REPT. NO. P-3716

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT INST.  
FOR BUDGET MANAGEMENT TRAINING, NATL. ASSOC. OF  
STATE BUDGET OFFICERS, NATURAL BRIDGE STATE  
PARK, KENTUCKY 20 SEP 67.

DESCRIPTORS: (\*BUDGETS, COMPUTER PROGRAMS);  
DECISION MAKING; MANAGEMENT PLANNING; SYSTEMS  
ENGINEERING; MATHEMATICAL MODELS; QUANTITATIVE  
ANALYSIS; COST EFFECTIVENESS (U)

PLANNING-PROGRAMMING-BUDGETING IS NOT  
DECISIONMAKING BY MATHEMATICAL MODEL, MATHEMATICAL  
AND STATISTICAL TECHNIQUES, OR COMPUTING MACHINES.  
PPB HAS THESE ESSENTIAL CHARACTERISTICS: (1)  
CAREFUL SPECIFICATION AND SYSTEMATIC ANALYSIS OF  
OBJECTIVES. (2) A SEARCH FOR THE RELEVANT  
ALTERNATIVES AND THE DIFFERENT WAYS AVAILABLE FOR  
ACHIEVING THE OBJECTIVES. (3) AN ESTIMATE OF  
THE TOTAL COSTS OF EACH ALTERNATIVE--DIRECT AND  
INDIRECT COSTS, AND BOTH INITIAL COSTS AND THOSE TO  
WHICH THE ALTERNATIVE COMMITS US FOR FUTURE YEARS.  
(4) AN ESTIMATE OF THE EFFECTIVENESS OF EACH  
ALTERNATIVE, OR OF HOW CLOSE IT COMES TO SATISFYING  
THE OBJECTIVE. (5) A COMPARISON AND ANALYSIS  
OF THE ALTERNATIVES, SEEKING THAT COMBINATION OF  
ALTERNATIVES THAT PROMISES THE GREATEST  
EFFECTIVENESS, FOR GIVEN RESOURCES, IN ACHIEVING THE  
OBJECTIVES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 052 14/1 12/2  
ARMY MATERIEL COMMAND WASHINGTON D C  
LEARNING CURVE METHODOLOGY FOR COST ANALYSTS: (U)  
OCT 67 29P DAILHAUSE FRANK J. I  
ROU, JOSEPH S. I

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COST EFFECTIVENESS; MANAGEMENT  
PLANNING); (\*MANAGEMENT PLANNING; COSTS);  
LEARNING CURVES; REGRESSION ANALYSIS; CURVE  
FITTING; PRODUCTION CONTROL; ARMY; MATHEMATICAL  
MODELS; DECISION MAKING (U)  
IDENTIFIERS: COST ANALYSIS (U)

COST ESTIMATES ARE SOMETIMES POORLY PREPARED  
BECAUSE THE LEARNING CURVE IS MISUNDERSTOOD OR BADLY  
APPLIED. THE LEARNING CURVE AS A TOOL, REGRESSION  
ANALYSIS AS A CURVE FITTING TECHNIQUE AND VARIOUS  
DEVICES FOR ADJUSTING LEARNING DATA FROM PRACTICAL  
PROCESS KNOWLEDGE ARE ADDRESSED SEPARATELY IN A  
VOLUMINOUS LITERATURE. THIS PAPER PUTS DOWN THE  
MAIN FRAMEWORK OF NECESSARY CONCEPTS IN THE  
APPLICATION OF THE LEARNING CURVE WITH APPROPRIATE  
REFERENCES TO THE LITERATURE. EXPERIENCE SHOWS  
THAT, AT SOME POINT IN AN ANALYSIS, THE ESTIMATOR IS  
REQUIRED TO ENTER OPINIONS BECAUSE OF LACK OF DATA,  
INCOMPLETE KNOWLEDGE OF THE PROCESS OR OTHER CAUSES  
BEYOND HIS CONTROL. THE EMPHASIS IN THIS PAPER IS  
TO DISTINGUISH BETWEEN MATHEMATICS AND JUDGMENT;  
BETWEEN CALCULATION AND INTUITION; PUTTING CAUTIONS  
ON THE ANALYST TO PROVIDE THE REVIEWER WITH  
VISIBILITY AS TO WHERE ONE ENDS AND THE OTHER BEGINS.  
TOPICS INCLUDE A DESCRIPTION OF THE FORMS OF THE  
LEARNING CURVE WITH DISTINCTIONS AMONG POSSIBLE  
VARIABLES; VARIOUS NECESSARY CALCULATIONS AND  
CONVERSIONS; FUNDAMENTAL CONCEPTS RELATED TO THE  
LOCATION OF A STRAIGHT LINE IN TWO DIMENSIONAL SPACE;  
FACTORS WHICH CONTRIBUTE TO LEARNING IN INDUSTRIAL  
PROCESSES AND ADJUSTMENTS FOR SPECIAL CIRCUMSTANCES.  
THE DOCUMENT WAS PREPARED AS GUIDANCE TO COST  
ANALYSTS IN THE US ARMY MATERIEL COMMAND.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 254 14/1 22/2 5/1  
AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL  
OPERATIONS  
UNCERTAINTY IN LAUNCH VEHICLE COST ESTIMATING EL  
SEGUNDO TECHNICAL OPERATIONS. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
OCT 67 28P FISH, JEROME G. ;  
REPT. NO. TR-1001(2515-01)-1  
CONTRACT: AF-04(695)-1001  
MONITOR: SAMSJ TR-67-33

UNCLASSIFIED REPORT

DESCRIPTORS: (\*LAUNCH VEHICLES(AEROSPACE),  
\*COST EFFECTIVENESS), STATISTICAL ANALYSIS,  
ERRORS, MANAGEMENT PLANNING, COSTS,  
MATHEMATICAL MODELS (U)

THE REPORT PRESENTS PRELIMINARY RESULTS OF A STUDY  
OF THE UNCERTAINTY IN ESTIMATING FUTURE AIR FORCE  
LAUNCH VEHICLE PROGRAM COSTS. THIS STUDY IS PART  
OF A LARGER PROJECT TO DEVELOP A LAUNCH VEHICLE  
PROGRAM COST ESTIMATING MODEL FOR THE SPACE  
SYSTEMS DIVISION OF THE AIR FORCE SYSTEMS  
COMMAND. THIS MODEL, AS WELL AS THE UNCERTAINTY  
ANALYSIS, IS BEING PREPARED IN SUPPORT OF LONG RANGE  
PLANNING AND IS NOT DIRECTED TOWARD COST ESTIMATING  
PROBLEMS ASSOCIATED WITH CONTRACT PRICING AND  
NEGOTIATIONS. THE RESULTS OF THE ANALYSIS CONSIST  
OF THE FIRST OF A TWO-PHASE STATISTICAL EXPERIMENT  
CONCERNING THE CONFIDENCE REGION ASSOCIATED WITH THE  
VARIATION OF COST ESTIMATES DERIVED BY USING INDUSTRY  
COST MODELS. THIS FIRST PHASE EXAMINES HAND-  
CALCULATED ESTIMATES USING COST ESTIMATING  
RELATIONSHIPS PUBLISHED BY INDUSTRY AND OTHERS.  
THE SECOND PHASE, TO BE REPORTED ON LATER, WILL  
DEAL WITH INDUSTRY-COMPUTED ESTIMATES BASED ON THEIR  
OWN COMPUTER COST MODELS. STATISTICAL ANALYSES  
WERE MADE OF THE MEAN AND STANDARD ERRORS OF A SMALL  
SAMPLE OF HAND-COMPUTED ESTIMATES FOR TOTAL PROGRAM  
AND SUBSYSTEM COSTS FOR A LIQUID AND A SOLID FUELED  
LAUNCH VEHICLE. SOME TENTATIVE INFERENCES ARE  
DRAWN CONCERNING POSSIBLE CAUSES OF THE VARIATIONS OF  
ESTIMATES. THE SAMPLE STANDARD DEVIATIONS  
CALCULATED RANGED FROM 7 TO 40 PERCENT OF THE  
CORRESPONDING MEAN VALUES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 801 13/10 1/3  
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS MD  
ANN POLIS DIV  
REFERENCE DESIGN STUDY OF MIST-JET PROPULSION SYSTEMS  
IN CAPTURED-AIR-BUBBLE SHIPS, (U)  
NOV 67 72P SMITH, JACK ; FOX, R. M. ;  
MONITOR: NSRDC 2496

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GROUND EFFECT MACHINES, MARINE  
PROPULSION), (\*JET PROPULSION, AEROSOLS),  
(\*MARINE PROPULSION, TWO-PHASE FLOW),  
EFFICIENCY, DESIGN, LIQUID JETS,  
PROPELLERS(MARINE),  
PERFORMANCE(ENGINEERING), COST  
EFFECTIVENESS (U)  
IDENTIFIERS: CAPTURED AIR BUBBLE SHIPS, MIST JET  
PROPULSION (U)

A REFERENCE DESIGN STUDY WAS MADE TO EVALUATE THE  
MIST-JET PROPULSION SYSTEM. PERFORMANCE  
CHARACTERISTICS OF 100-, 500-, AND 2500-TON CAPTURED-  
AIR-BUBBLE SURFACE EFFECT SHIPS WITH A MIST-JET,  
A WATER-JET, AND A PROPELLER PROPULSION SYSTEM WERE  
EXAMINED. BASED ON COST PER TON MILE, PAYLOAD, AND  
FUEL USE VS SPEED FOR VARIOUS OPERATIONAL RANGES, IT  
WAS CONCLUDED THE MIST JET IS A SUPERIOR  
PROPULSION SYSTEM IN THE 100-TON SIZE FOR SHORT-  
RANGE, HIGH-SPEED OPERATION. THE MIST JET IS  
COMPETITIVE WITH THE OTHER TWO SYSTEMS IN LARGER SIZE  
SHIPS AT LONGER RANGE. IT IS RECOMMENDED THE  
DEVELOPMENT OF THE MIST JET BE PURSUED AS IT  
OFFERS ADDITIONAL ADVANTAGES OF NO MOVING PARTS IN  
CONTACT WITH THE WATER, THE USE OF STATE-OF-THE-ART  
EQUIPMENT, AND LOW DEVELOPMENT COST AS COMPARED TO  
THE WATER-JET OR THE SUPERCAVITATING CONTROLLABLE-  
PITCH PROPELLER SYSTEMS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 850 1/2 14/1 17/7  
SPEAS (R DIXON) ASSOCIATES MANHASSET N Y  
COST/BENEFIT ANALYSIS FOR ALL-WEATHER LANDING SYSTEM  
(AWLS) CATEGORY II AND III. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
OCT 67 100P SPEAS, R. D.; SMITH, M. H.  
; SCHMIDT, HARRY P. ;  
CONTRACT: FA-67-WA-1642  
PROJ: FAA-320-102-01A  
MONITOR: FAA-RD 67-28

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ALL-WEATHER AVIATION, COST  
EFFECTIVENESS), (\*INSTRUMENT LANDINGS, COST  
EFFECTIVENESS), AIRCRAFT LANDINGS,  
INSTRUMENTATION, PREDICTIONS, AIRBORNE,  
ECONOMICS, AIRPORTS (U)

THE STUDY DETERMINES THE COSTS AND BENEFITS  
RESULTING FROM IMPLEMENTATION OF CATEGORY II AND  
III ALL-WEATHER SYSTEMS DURING THE 1967-1980 TIME  
PERIOD, AND ESTABLISHES THE OPTIMUM PRACTICAL GROUND-  
AIRBORNE IMPLEMENTATION SCHEDULE, INCLUDING THE  
PRIORITY-RANKED ORDER FOR EQUIPPING FORTY INDIVIDUAL  
AIRPORTS. THE IMPLEMENTATION SCHEDULE CALLS FOR  
THE FOLLOWING EQUIPMENT EFFECTIVENESS: (1)  
CATEGORY II BY 1970, (2) CATEGORY IIIA  
BY 1975, (3) CATEGORY IIIC BY 1980. THE  
COST BENEFITS, AS CONSERVATIVELY QUANTIFIED IN THIS  
STUDY, SHOW IN GENERAL SUMMARY TERMS THAT: (1)  
CATEGORY II HAS IMMEDIATE (BY 1970) NET  
ECONOMIC BENEFITS. (2) CATEGORY IIIA AND  
IIIB SHOW NEARLY THE SAME RESULTS AND PROVIDE NET  
ECONOMIC BENEFITS IF MORE THAN TWENTY-THREE AIRPORTS  
ARE IMPLEMENTED BY 1975. (3) CATEGORY IIIC  
WILL PRODUCE NET ECONOMIC BENEFITS ONLY IF THE  
MAJORITY OF THE FORTY AIRPORTS ARE IMPLEMENTED BY  
1980. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 983 9/2 14/1  
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF  
AN ANALYTICAL COST COMPARISON OF COMPUTER OPERATING  
SYSTEMS. (U)  
DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
JUN 67 213P ERIKSON, WARREN J. ;  
REPT. NO. TM-3525  
CONTRACT: F19628-67-C-0000

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DATA PROCESSING SYSTEMS,  
PERFORMANCE(ENGINEERING)), (\*TIME SHARING,  
PERFORMANCE(ENGINEERING)), (\*COST  
EFFECTIVENESS, DATA PROCESSING SYSTEMS),  
MANAGEMENT PLANNING, DECISION MAKING,  
OPTIMIZATION, MATHEMATICAL MODELS, MAINTENANCE,  
PROGRAMMING(COMPUTERS) (U)  
IDENTIFIERS: BATCH PROCESSING (U)

THE REPORT ATTEMPTS TO ANSWER SOME OF THE QUESTIONS  
CONCERNING THE ADVANTAGES AND DISADVANTAGES OF TIME-  
SHARING. TO ACCOMPLISH THIS, THE GENERAL PROBLEM  
OF EVALUATING COMPUTER SYSTEM PERFORMANCE IS FIRST  
ADDRESSED. GENERAL SYSTEM CHARACTERISTICS ARE  
SPECIFIED THAT INCLUDE THE COMPUTER AND ITS OPERATING  
SYSTEM, AND USERS AND THEIR JOBS. THE MAIN  
EMPHASIS IS PLACED UPON THE OPERATING SYSTEM; THE  
EFFECTS OF HAVING DIFFERENT COMPUTERS, USERS, OR JOBS  
ARE TREATED AS PARAMETERS. THE MOST IMPORTANT  
EVALUATION CRITERION IS CONSIDERED TO BE COST, WHICH  
INCLUDES BOTH USER COST AND COMPUTER SYSTEM COST.  
QUANTITATIVE MODELS ARE DEVELOPED THAT DESCRIBE  
COMPUTER CENTER USERS, THE PROGRAMS THEY RUN, AND THE  
DIFFERENT OPERATING SYSTEMS THEY MIGHT USE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 185 1/3 5/8 5/5  
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND  
CONTROL SYSTEMS DIV  
INTEGRATED COCKPIT RESEARCH PROGRAM, VOLUME I. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 67 148P MURPHY, JOHN V. ;  
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;  
HAMSON, ROBERT L. ; BERNBERG, RAYMOND E. ;  
CONTRACT: NONR-4951(00)  
PROJ: NR-213-041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-662 186.

DESCRIPTORS: (\*COCKPITS, SYSTEMS ENGINEERING),  
COST EFFECTIVENESS, MILITARY REQUIREMENTS, HUMAN  
ENGINEERING, DISPLAY SYSTEMS, CONTROL SYSTEMS,  
PILOTS, AIRCRAFT, PREDICTIONS (U)

THE PROGRAM WAS DESIGNED TO DEVELOP A METHODOLOGY  
FOR AVIONIC SYSTEM DESIGN APPLICATION TO AIRCRAFT IN  
AN ADVANCED TIME PERIOD. EMPHASIS WAS PLACED ON  
TWO MAJOR ACTIVITIES. ONE WAS CONCERNED WITH  
IDENTIFYING THE REQUIREMENTS FOR THE OPERATOR/AVIONIC  
SYSTEM IN THE FUTURE TIME PERIOD, AND A SECOND  
ACTIVITY WAS CONCERNED WITH IDENTIFYING THE  
TECHNOLOGICAL STATE-OF-THE-ART THAT WOULD BE  
AVAILABLE IN THE ADVANCED TIME PERIOD TO MEET THOSE  
REQUIREMENTS. SUCCESSIVE ASPECTS OF THE STUDY WERE  
CONCERNED WITH SYNTHESIZING AN AVIONIC SYSTEM,  
COMPLETING A COST/EFFECTIVENESS EVALUATION, AND THE  
PREPARATION OF A COCKPIT MOCKUP. VOLUME I  
DESCRIBES A 27-STEP PROCESS THAT CAN BE APPLIED TO  
ANY AIRCRAFT SYSTEM EARLY IN THE DEVELOPMENTAL CYCLE.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 186 1/3 5/8 5/5  
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND  
CONTROL SYSTEMS DIV  
INTEGRATED COCKPIT RESEARCH PROGRAM. VOLUME II. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 67 231F MURPHY, JOHN V. ;  
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;  
HAMSON, ROBERT L. ; BERNBERG, RAYMOND E. ;  
CONTRACT: NONR-4951(00)  
PROJ: NR-213-041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-662 186; AND  
APPENDICES, AD-658 753, AND AD-658 754.

DESCRIPTORS: (\*COCKPITS, SYSTEMS ENGINEERING),  
SHORT TAKE-OFF PLANES, VERTICAL TAKE-OFF PLANES,  
COST EFFECTIVENESS, MILITARY REQUIREMENTS, HUMAN  
ENGINEERING, DISPLAY SYSTEMS, CONTROL SYSTEMS,  
PILOTS, PREDICTIONS (U)

THE PROGRAM WAS DESIGNED TO DEVELOP A METHODOLOGY  
FOR AVIONIC SYSTEM DESIGN APPLICATION TO AIRCRAFT IN  
AN ADVANCED TIME PERIOD. EMPHASIS WAS PLACED ON  
TWO MAJOR ACTIVITIES. ONE WAS CONCERNED WITH  
IDENTIFYING THE REQUIREMENTS FOR THE OPERATOR/AVIONIC  
SYSTEM IN THE FUTURE TIME PERIOD, AND A SECOND  
ACTIVITY WAS CONCERNED WITH IDENTIFYING THE  
TECHNOLOGICAL STATE-OF-THE-ART THAT WOULD BE  
AVAILABLE IN THE ADVANCED TIME PERIOD TO MEET THOSE  
REQUIREMENTS. SUCCESSIVE ASPECTS OF THE STUDY WERE  
CONCERNED WITH SYNTHESIZING AN AVIONIC SYSTEM,  
COMPLETING A COST/EFFECTIVENESS EVALUATION, AND THE  
PREPARATION OF A COCKPIT MOCKUP. VOLUME II  
DESCRIBES THE APPLICATION/RESULTS OF THE DEVELOPED  
METHODOLOGY FOR AVIONIC SYSTEM DESIGN IN A V/STOL  
AIRCRAFT FOR AN ADVANCED TIME PERIOD. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 229 5/3

YALE UNIV NEW HAVEN CONN COWLES FOUNDATION FOR RESEARCH  
IN ECONOMICS

A NOTE ON TAXATION, INCREASING RETURNS DUE TO SET-UP  
COSTS AND COMPETITIVE EQUILIBRIUM, (U)

NOV 67 13P SHUBIK, MARTIN ;

REPT. NO. COWLES FOUNDATION PAPER-237

CONTRACT: NONR-3055(01)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ECONOMICS, MATHEMATICAL MODELS),  
OPTIMIZATION, COSTS, GAME THEORY (U)

IDENTIFIERS: COMPETITION, TAXES, SET-UP  
COSTS (U)

GIVEN THE FOLLOWING PROBLEM: SUPPOSE THAT A  
CLOSED ECONOMY HAS ALL OF THE PROPERTIES OF CONVEXITY  
OF PREFERENCE SETS AND PRODUCTION SETS EXCEPT THAT IN  
ORDER TO USE CERTAIN PRODUCTION PROCESSES SET-UP  
COSTS MUST BE PAID. THE SET UP COSTS CAUSE  
INCREASING RETURNS AND DESTROY THE COMPETITIVE  
EQUILIBRIUM; IS THERE A TAX POLICY WHICH RESTORES THE  
EQUILIBRIUM AND WOULD IT ALWAYS BE APPROVED  
UNANIMOUSLY OR BY A MAJORITY VOTE. THIS PROBLEM IS  
DISCUSSED IN THIS REPORT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 266 21/4 10/2 13/13  
BATTELLE MEMORIAL INST COLUMBUS OHIO COLUMBUS LABS  
DETERIORATION OF FUELS AND FUEL-USING EQUIPMENT. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 67 86P TRAYSER, DAVID A. ;  
HEIN, GLEN M. ; ELLIS, WARREN C. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FUELS, DEGRADATION, (\*FUEL  
SYSTEMS, DEGRADATION), (\*FALLOUT SHELTERS,  
\*AUXILIARY POWER PLANTS), STORAGE,  
MAINTENANCE, INSTALLATION, PRESERVATION,  
DRYING, CORROSION INHIBITION, LUBRICANTS,  
INTERNAL COMBUSTION ENGINES, DIESEL ENGINES,  
COST EFFECTIVENESS (U)

THE STUDY COVERED TWO CLOSELY RELATED AREAS OF INVESTIGATION: (1) THE DETERIORATION OF FUELS AND EQUIPMENT IN STORAGE AND (2) THE STANDBY MAINTENANCE REQUIREMENTS OF AUXILIARY POWER SYSTEMS FOR COMMUNITY PROTECTIVE SHELTERS. DETERMINATION OF THE STATE-OF-KNOWLEDGE AND CURRENT PRACTICES IN THE FIRST AREA OF INVESTIGATION LED TO THE DEVISING OF SPECIFIC PLANS OF ACTION IN THE SECOND AREA. A NUMBER OF PLANS FOR STANDBY-MAINTENANCE ROUTINES FOR COMMUNITY SHELTER POWER SYSTEMS WERE DEVISED DURING THE STUDY. THESE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE FROM THE LITERATURE AND FROM FIELD EXPERIENCE. THE COSTS FOR ACQUISITION, INSTALLATION, AND MAINTENANCE OF THESE SYSTEMS AND FOR THE STANDBY MAINTENANCE ROUTINES ARE ESTIMATED AND COMPARED ON THE BASIS OF 5-, 10-, AND 15-YEAR STANDBY PERIODS. FROM THE RESULTS IT APPEARS THAT A GASOLINE ENGINE POWER SYSTEM UTILIZING COMMERCIAL FUELS AND PRESERVATIVES, MAINTAINED IN A LOW-HUMIDITY ENVIRONMENT, AND EXERCISED EVERY 6 WEEKS, WOULD PROVIDE MAXIMUM COST EFFECTIVENESS CONSIDERING THE PRESENT STATE OF KNOWLEDGE. IT WAS NOTED DURING THIS STUDY THAT INFORMATION IS PARTICULARLY SPARSE IN THE AREAS OF: LONG-TERM STORAGE EFFECTS ON COMMERCIAL AND SPECIAL FUELS AND LUBRICANTS, INACTIVE STORAGE OF ENGINE-GENERATOR SETS IN A REASONABLE STATE OF READINESS, AND THE FUEL-DETERIORATION TOLERANCE OF GASOLINE AND DIESEL ENGINES. RECOMMENDED SPECIFIC RESEARCH PROGRAMS TO CLOSE EACH OF THESE TECHNOLOGICAL GAPS ARE BRIEFLY DESCRIBED. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 338 15/5 5/3  
RAND CORP SANTA MONICA CALIF  
A PROCESS FUNCTION FOR RAIL LINEHAUL OPERATIONS, (U)  
NOV 67 49P DESALVO, JOSEPH S. I  
REPT. NC. P-3729

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE  
ECONOMETRIC SOCIETY MEETINGS IN WASHINGTON, D.  
C., 28 DEC 67. PREPARED IN COOPERATION WITH  
NORTHWESTERN UNIV., LAFAYETTE, IND., ECONOMETRICS  
RESEARCH CENTER.

DESCRIPTORS: (\*RAILROADS, CARGO),  
(\*ECONOMICS, RAILROADS), CARGO VEHICLES,  
WAGES, SCHEDULING, COSTS, TRANSPORTATION (U)

LIKE MANY PRODUCTIVE ACTIVITIES, RAIL FREIGHT  
TRANSPORTATION MAY BE DIVIDED INTO VARIOUS PROCESSES.  
ONE DIVISION THAT HAS BEEN USED BEFORE IS:  
(1) ASSEMBLY, (2) LINEHAUL, (3) LOADING  
AND UNLOADING. THIS PAPER IS CONCERNED WITH THE  
SECOND OF THESE EXCLUSIVELY. THE AIM IS TO DEVELOP  
A PRODUCTION FUNCTION FOR THE LINEHAUL PROCESS  
(HEREAFTER CALLED A LINEHAUL PROCESS FUNCTION).  
SUCH A PROCESS FUNCTION IS INTERESTING IN ITS OWN  
RIGHT: WITH IT ONE MAY INVESTIGATE VARIOUS  
PRODUCTIVITY RELATIONSHIPS, ISOQUANTS, AND RETURNS TO  
SCALE FOR THE LINEHAUL PROCESS. THE PROCESS  
FUNCTION MAY ALSO BE USED TO EXAMINE THE BEHAVIOR OF  
LINEHAUL COSTS. IN ADDITION, IT WOULD BE POSSIBLE  
TO SYNTHESIZE RAILWAY COSTS IF PROCESS FUNCTIONS FOR  
ALL THREE PROCESSES WERE AVAILABLE. IN THIS PAPER,  
ALL BUT THE LAST OF THESE IS ATTEMPTED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-668 659 15/5  
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SYSTEMS  
EVALUATION DIV  
ON THE ECONOMIC APPLICATION OF AIRLIFT TO RESUPPLY  
AND ITS IMPACT ON INVENTORY LEVELS. (U)  
DESCRIPTIVE NOTE: RESEARCH PAPER,  
OCT 67 80P SORIANO, A. IGROSS, D. J  
REPT. NO. RP-P-370  
CONTRACT: DAHC15-67-C-0012  
MONITOR: IDA/HQ 67-6813

UNCLASSIFIED REPORT

DESCRIPTORS: \*INVENTORY CONTROL, OPERATIONS  
RESEARCH), (\* AIR TRANSPORTATION, \*STOCK LEVEL  
CONTROL), COSTS, ECONOMICS, TIME,  
SHIPPING(MARINE), STATISTICAL ANALYSIS (U)

THE STUDY DEMONSTRATES HOW, IN A SUPPLY SYSTEM, THE  
INVENTORY STOCK LEVELS NEEDED FOR A SPECIFIED LEVEL  
OF CUSTOMER SERVICE VARY AS A FUNCTION OF THE  
REQUISITION LEAD TIME AND PATTERN. THE STUDY  
PRESENTS A PRACTICAL METHOD TO DETERMINE THE SAVINGS  
IN INVENTORY HOLDING COST MADE POSSIBLE BY REDUCING  
REQUISITION LEAD TIME FOR PROBLEMS INVOLVING SEVERAL  
MILLION DIFFERENT LINE ITEMS. THE APPROACH  
DEVELOPED WAS APPLIED SUCCESSFULLY TO THE PEACETIME  
MILITARY OVERSEAS RESUPPLY PROBLEM INVOLVING OVER 200  
SUPPLY DISTRIBUTION POINTS WITH MORE THAN TWO MILLION  
DIFFERENT LINE ITEMS. (AUTHOR) (U)

UNCLASSIFIED



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 661 5/9  
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM  
ANALYSIS DIV  
THE SUPPLY OF FIRST-TERM MILITARY OFFICERS, (U)  
MAR 67 110P FECHTER, ALAN E. J  
REF. NO. S-290  
CONTRACT: SD-50  
MONITOR: IDA/HQ 67-6607

UNCLASSIFIED REPORT

DESCRIPTORS: (\*OFFICER PERSONNEL; RECRUITING);  
WAGES; PROCUREMENT; PERSONNEL MANAGEMENT;  
FEDERAL BUDGETS; DEPARTMENT OF DEFENSE; COSTS;  
MILITARY PERSONNEL (U)

THE STUDY EXAMINES THE EFFECTS OF POPULATION TRENDS, MILITARY CONSCRIPTION, AND PAY ON THE SUPPLY OF NEWLY COMMISSIONED OFFICERS AND, BASED ON THESE FACTORS, ESTIMATES THE ADDITIONAL BUDGETARY COSTS THAT WOULD BE INCURRED BY THE DEPARTMENT OF DEFENSE IN ELIMINATING THE DRAFT AS A PROCUREMENT FACTOR FOR OFFICERS. THE STUDY REVIEWS CURRENT TRENDS AND PATTERNS OF OFFICER-PROCUREMENT; DISCUSSES THE FACTORS WHICH ARE THOUGHT TO BE IMPORTANT DETERMINANTS OF OFFICER-SUPPLY--ELIGIBLE POPULATION, THE DRAFT, AND EARNINGS OPPORTUNITIES FOR POTENTIAL OFFICERS IN MILITARY AND NONMILITARY CAREERS; CONTAINS ESTIMATES OF THE EFFECT OF POPULATION TRENDS ON THE SUPPLY OF NEWLY COMMISSIONED OFFICERS; EXAMINES THE EFFECTS OF MILITARY CONSCRIPTION; INVESTIGATES THE EFFECTS ON OFFICER SUPPLY OF MILITARY AND NONMILITARY EARNINGS OPPORTUNITIES; AND PRESENTS AN ILLUSTRATIVE EXAMPLE OF HOW THE FINDINGS MAY BE USED TO ESTIMATE THE COST OF SHIFTING TO AN ALL-VOLUNTEER OFFICER FORCE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 749 13/13 15/3  
STANFORD RESEARCH INST MENLO PARK CALIF  
SHELTER ENTRANCEWAYS AND OPENINGS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
SEP 67 184P WIFHLF, CARL K. ;  
CONTRACT: DAHC20-67-C-0136  
PROJ: SRI-MU-6300-070

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FALLOUT SHELTERS, DESIGN),  
DOORS, CONSTRUCTION, STRUCTURAL PARTS, TESTS,  
COSTS, CONFIGURATION, BLAST, SHIELDING (U)

THE OBJECTIVE OF THE INVESTIGATION WAS TO DEVELOP, TEST, AND EVALUATE LOW COST SHELTER ENTRANCEWAYS AND OPENINGS FOR PROVIDING PROTECTION AGAINST THE EFFECTS OF NUCLEAR WEAPONS IN THE OVERPRESSURE REGIONS UP TO 20 PSI. THE APPROACH ADOPTED WAS (1) TO IDENTIFY AS MANY FACTORS AS POSSIBLE THAT INFLUENCE, LIMIT, OR CONSTRAIN THE ENTRANCEWAY DESIGN; (2) TO ATTEMPT TO IDENTIFY THE MULTITUDE OF INTERACTING SITUATIONS; AND (3) TO ESTABLISH THE SITUATIONS MOST IMPORTANT TO THE DESIGN OF ENTRANCEWAYS FOR CIVIL DEFENSE SHELTERS. FROM AN EXAMINATION OF THE NUMEROUS INFLUENCING FACTORS, PARAMETERS WERE SELECTED AS THE BASIS FOR PERFORMING COST ANALYSES FOR VARIOUS ENTRANCEWAY CONFIGURATIONS. COST ESTIMATES WERE THEN PREPARED FOR 36 INDIVIDUAL ENTRANCEWAYS AND 2 ESCAPE EXITS. FROM THESE DATA, IT WAS POSSIBLE TO DEVELOP THE TOTAL CONSTRUCTION COST OF SHELTER ENTRANCEWAYS FOR LOADING CAPACITIES UP TO 1,000 PERSONS/MIN FOR SIX GENERAL TYPES OF ENTRANCEWAYS APPLICABLE FOR CIVIL DEFENSE FALLOUT AND BLAST SHELTERS. SINCE THE LOADING CAPACITY REQUIRED FOR A SPECIFIC ENTRANCEWAY SYSTEM CANNOT BE DETERMINED IN A GENERAL MANNER BEFOREHAND (AS EXPLAINED IN THE BODY OF THE REPORT), THE COST DATA ARE PRESENTED ON THE BASIS OF THE ENTRANCEWAY COST/PERSON FOR SHELTER CAPACITIES UP TO 10,000 PERSONS FOR THE SIX ENTRANCEWAY TYPES AND FOR ENTRANCEWAY LOADING CAPACITIES BETWEEN 67 AND 1,000 PERSONS/MIN. (U)  
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 781 15/3 5/1  
STANFORD RESEARCH INST MENLO PARK CALIF  
THE COST AND FEASIBILITY OF EMERGENCY COOPERATION  
AMONG LOCAL GOVERNMENTS, (U)  
OCT 67 93P MOLL, KENDALL ;  
HIRSHBERG, RICHARD ;  
PROJ: SRI-MU-4949-410

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON CIVIL DEFENSE  
ORGANIZATION STUDIES.

DESCRIPTORS: (\*CIVIL DEFENSE SYSTEMS, \*MANAGEMENT  
PLANNING), MANAGEMENT ENGINEERING, CIVIL DEFENSE  
PERSONNEL, COSTS, FEASIBILITY STUDIES, UNITED  
STATES GOVERNMENT, CONTROL, POLITICAL  
SCIENCE (U)

FROM QUANTITATIVE CONSIDERATIONS OF THE NEED FOR  
EMERGENCY INTERACTIONS AMONG LOCAL GOVERNMENT  
FUNCTIONS, THE REPORT CONCLUDES THAT AN ESSENTIALLY  
NEW FORM OF ORGANIZATION MUST BE PLANNED FOR  
EMERGENCY COORDINATION. A NEW ORGANIZATION WILL  
REQUIRE ABOUT 200 SPECIALLY TRAINED COORDINATORS IN  
SANTA CLARA COUNTY, CALIFORNIA. REALISTIC  
PLANNING, RECRUITING, TRAINING, AND TESTING ESTIMATES  
FOR SUCH A PROGRAM IMPLY A NATIONAL CIVIL DEFENSE IN  
THE ORDER OF \$2 MILLION PER YEAR. ANALYSES OF  
THE LEGAL BASIS AND POTENTIAL LOCAL ACCEPTANCE OF  
CENTRALIZED COORDINATION IN SANTA CLARA COUNTY  
INDICATE THAT AN EMERGENCY ORGANIZATION WOULD BE  
FEASIBLE TO ESTABLISH USING CERTAIN PROGRAM  
GUIDELINES. FIRST, PROGRAM DIRECT COSTS WOULD BE  
MOST ACCEPTABLE IF SUPPORTED BY THE FEDERAL  
GOVERNMENT. SECOND, THE ORGANIZATION SHOULD BE  
LOCALLY TAILORED TO EXISTING GOVERNMENT STRUCTURES  
RATHER THAN PATTERNED UNIFORMLY THROUGHOUT THE  
COUNTRY. THIRD, THE ORGANIZATION SHOULD BE  
FLEXIBLE TO PERMIT PRE-EMPTION OF LOCAL AUTHORITY IN  
PROPORTION TO THE SEVERITY OF THE EMERGENCY.  
(AUTHOR) (U)

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DDC REPORT BIBL OGRAPHY SEARCH CONTROL NO. 000123

AD-662 886 14/1 15/3 22/4  
AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL  
OPERATIONS  
TECHNICAL DIRECTION AND EVALUATION OF COST ANALYSIS  
FOR SPACE SYSTEM STUDIES, (U)  
MAY 67 45P NEISS, JOSEPH A. ;  
BROWN, HERBERT ;  
REPT. NO. TR-1001(2515-01)-2  
CONTRACT: AF 04(695)-1001  
MONITOR: SSD TR-67-98

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COST EFFECTIVENESS, AIR  
FORCE), (\*SPACECRAFT, COST EFFECTIVENESS),  
ECONOMICS, BUDGETS, COSTS, OPTIMIZATION,  
ADVANCED PLANNING, PREDICTIONS, DECISION MAKING (U)  
IDENTIFIERS: COST ESTIMATING RELATIONSHIPS, SPACE  
SYSTEMS, COST ANALYSIS (U)

ECONOMIC AND COST EFFECTIVENESS ANALYSES OF  
PROPOSED SYSTEM CONCEPTS HAVE BECOME VITAL  
REQUIREMENTS IN VIRTUALLY ALL U. S. AIR FORCE  
SPACE SYSTEMS DIVISION STUDIES. SINCE  
DEVELOPMENT OF A SPACE SYSTEM IS EXTREMELY COSTLY,  
LEAD TIME IS LENGTHY, AND BUDGET LIMITATIONS ARE  
SEVERE, THERE IS A CLEAR NEED TO FORECAST THE TOTAL  
SYSTEMS COST AND EFFECTIVENESS OF A PROPOSED NEW  
SYSTEM AS EARLY IN THE PLANNING CYCLE AS POSSIBLE.  
THIS REPORT PRESENTS HIGHLIGHTS OF THE SIGNIFICANT  
ASPECTS OF TECHNICAL DIRECTION EFFORTS IN SYSTEMS  
COST AND COST EFFECTIVENESS ANALYSES. MAJOR  
OBJECTIVES OF THIS EFFORT ARE TO ENSURE THAT THE  
INDUSTRY CONTRACTOR: (A) PERFORMS A TOTAL  
SYSTEM COST ANALYSIS OF SUFFICIENT DEPTH AND VALIDITY  
TO PERMIT ANALYSIS AND EVALUATION; (B)  
IDENTIFIES THOSE OPERATIONAL DESIGN AND HARDWARE  
CONCEPTS WHICH WILL PROVIDE THE GREATEST SAVINGS IN  
TOTAL SYSTEMS COST; (C) PROPERLY VALIDATES  
THOSE SIGNIFICANT CONCEPTS AND COST RELATIONSHIPS  
WHICH WILL LEAD TO THE SELECTION OF AN OPTIMUM  
CONFIGURATION. RECOMMENDATIONS ON THE APPROACH AND  
TECHNIQUES TO FULFILL THESE OBJECTIVES ARE PROVIDED.  
THE USES AND LIMITATIONS OF INDUSTRY COST MODELS,  
COST ESTIMATING RELATIONSHIPS, AND OTHER ESTIMATING  
METHODS ARE DISCUSSED. COMMON PIT-FALLS IN SYSTEM  
COST ANALYSIS ARE ILLUSTRATED TO INDICATE THE  
GUIDANCE NECESSARY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 089 17/7 1/5 1/2 14/1  
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS  
RESEARCH AND DEVELOPMENT SERVICE  
ALTERNATIVE APPROACHES FOR REDUCING DELAYS IN  
TERMINAL AREAS. (U)

DESCRIPTIVE NOTE: STAFF STUDY,  
NOV 67 136P MEISNER, MILTON ; VAN  
DUYNE, EDWARD ; FAISON, WALTER ;  
REPT. NO. FAA-RD-67-70  
PROJ: FAA-177-611-01R

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR TRAFFIC CONTROL TERMINAL AREAS,  
OPERATIONS RESEARCH); (\*SCHEDULING,  
\*AIRPORTS); (\*AIR TRAFFIC CONTROL SYSTEMS,  
OPTIMIZATION); COST EFFECTIVENESS; AUTOMATION;  
REDUCTION; AIR TRAFFIC (U)

THE STUDY PRESENTS ALTERNATIVE APPROACHES,  
REGULATORY AND TECHNICAL, TO REDUCING AIRCRAFT DELAYS  
IN TERMINAL AREAS. DELAYS AND BENEFITS VERSUS COST  
WERE EXAMINED FOR RUNWAY, TAXIWAY, AND ILS  
IMPROVEMENTS; NEW AIRPORTS; AIR TRAFFIC CONTROL  
PROCEDURAL CHANGES; AUTOMATION OF THE FINAL APPROACH  
CONTROL FUNCTION; AND REDUCTION OF SCHEDULE PEAKS.  
THE SPECIFIC AIRPORTS STUDIED WERE: KENNEDY  
INTERNATIONAL, LA GUARDIA, NEWARK,  
WASHINGTON NATIONAL, CHICAGO O'HARE, LOS  
ANGELES, SAN FRANCISCO AND OAKLAND.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 097 12/2

STANFORD UNIV CALIF DEPT OF STATISTICS  
MIXED INTEGER PROGRAMMING ALGORITHMS FOR SITE  
SELECTION AND OTHER FIXED CHARGE PROBLEMS HAVING  
CAPACITY CONSTRAINTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

NOV 67 135P GRAY, PAUL ;

REPT. NO. TR-101

CONTRACT: NONR-225(53)

PROJ: NR-042-002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY ARO  
AND NSF.

DESCRIPTORS: (\*SITE SELECTION, ALGORITHMS),  
(\*LINEAR PROGRAMMING, OPTIMIZATION), COSTS,  
FLOW CHARTING, TRANSPORTATION, THESES, PROBLEM  
SOLVING (U)

IDENTIFIERS: FIXED CHARGE PROBLEM (U)

ALGORITHMS FOR SOLVING SITE-SELECTION AND SIMILAR  
FIXED CHARGE PROBLEMS WITH UPPER BOUND CONSTRAINTS  
ARE PRESENTED. THE BASIC APPROACH IS TO FORMULATE  
THE PROBLEM AS A MIXED INTEGER PROGRAM AND TO SOLVE  
THESE PROGRAMS BY DECOMPOSING THEM INTO A MASTER  
INTEGER PROGRAM AND A SERIES OF SUBPROBLEMS WHICH ARE  
LINEAR PROGRAMS. TO REDUCE THE NUMBER OF VERTICES  
TO BE EXAMINED TO MANAGEABLE PROPORTIONS, THE BOUND-  
AND-SCAN ALGORITHM BY F. S. HILLIER WAS ADAPTED  
TO THE FIXED CHARGE PROBLEM. ALGORITHMS ARE  
PRESENTED FOR FOUR CLASSES OF PROBLEMS: (1)  
FIXED CHARGE PROBLEM WITH LINEAR VARIABLE COSTS AND  
A FIXED CHARGE FOR EACH VARIABLE AT NON-ZERO LEVEL.  
(2) PROBLEM 1 WITH SEPARABLE CONCAVE OR CONVEX  
VARIABLE COSTS. (3) A WAREHOUSE LOCATION  
PROBLEM IN WHICH VARIABLE COSTS AND CONSTRAINTS ARE  
OF THE TRANSPORTATION TYPE. A FIXED CHARGE IS  
ASSOCIATED WITH EACH WAREHOUSE OPENED. (4) THE  
FIXED CHARGE TRANSPORTATION PROBLEM IN WHICH A FIXED  
CHARGE IS ASSOCIATED WITH EACH ROUTE RATHER THAN WITH  
EACH WAREHOUSE. COMPUTATIONAL RESULTS FOR  
PROBLEMS 1, 2, AND 4 ARE PRESENTED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 155 13/10 5/1  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM  
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF  
WORK ABOARD SHIP. (U)  
DESCRIPTIVE NOTE: SUMMARY REPT.  
NOV 67 61P  
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MERCHANT VESSELS, \*MANAGEMENT  
ENGINEERING), COSTS, MANPOWER STUDIES,  
EFFECTIVENESS, FUNCTIONAL ANALYSIS, PERSONNEL  
MANAGEMENT (U)

THE REPORT IS ONE OF A SERIES ON THE RESULTS OF  
ANALYSIS OF WORK ABOARD 20 MERCHANT SHIPS. IT  
SUMMARIZES INFORMATION REPORTED PREVIOUSLY ON  
INDIVIDUAL SHIPS. IN THE REPORT, A SYSTEM FOR THE  
COLLECTION AND ANALYSIS OF INFORMATION REQUIRED FOR  
EFFECTIVE SHIP MANAGEMENT IS DESCRIBED AND THE  
PLANNED DEVELOPMENT OF THE SYSTEM FOR INDUSTRY-WIDE  
USE IS DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 187 5/3 12/2  
YALE UNIV NEW HAVEN CONN COWLES FOUNDATION FOR RESEARCH  
IN ECONOMICS  
TOWARD A STUDY OF BIDDING PROCESSES. PART IV. GAMES  
WITH UNKNOWN COSTS. (U)  
67 20P SHUBIK, MARTIN ;  
GRIESMER, JAMES H. ; LEVITAN, RICHARD E. ;  
CONTRACT: NONR-3055(01)

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN NAVAL RESEARCH  
LOGISTICS QUARTERLY V14 N4 P415-33 DEC 1967.  
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH IBM  
WATSON RESEARCH CENTER, YORKTOWN HEIGHTS, N. Y.

DESCRIPTORS: (\*GAME THEORY, ECONOMICS);  
(\*ECONOMICS, MATHEMATICAL MODELS), COSTS,  
DECISION MAKING, MANAGEMENT PLANNING,  
THEOREMS (U)  
IDENTIFIERS: BIDDING, COMPETITION (U)

THE PAPER REPRESENTS A CONTINUATION OF THREE  
PREVIOUS PAPERS IN THE STUDY OF COMPETITIVE BIDDING  
PROCESSES. IT TREATS THE CASE WHERE A BIDDER'S  
KNOWLEDGE OF HIS COMPETITOR'S COST IS GIVEN BY A  
PROBABILITY DISTRIBUTION OVER A CERTAIN INTERVAL.  
THE RESULTS OBTAINED EXTEND THE WORK OF VICKREY  
TO THE CASE WHERE THE COST INTERVALS ARE NOT  
NECESSARILY SYMMETRIC. (U)

UNCLASSIFIED



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DEC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 410 14/1 5/1 5/9  
RAND CORP SANTA MONICA CALIF  
SYSTEMS ANALYSIS AND THE CERTIFIED PUBLIC  
ACCOUNTANT,  
DEC 67 19P TENZER, A. J. :  
REPT. NO. P-3739

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE  
GRADUATE STUDY CONFERENCE, 1967 SPONSORED BY THE  
CALIFORNIA CPA FOUNDATION FOR EDUCATION AND  
RESEARCH HELD AT STANFORD UNIVERSITY, STANFORD  
CALIFORNIA IN AUGUST 1967.

DESCRIPTORS: (\*COST EFFECTIVENESS, \*MANAGEMENT  
PLANNING), DECISION MAKING,  
MODELS(SIMULATIONS), SYSTEMS ENGINEERING,  
PERSONNEL

(U)

THE COST-EFFECTIVENESS ASPECTS OF THE SYSTEMS  
ANALYSIS APPROACH ARE ILLUSTRATED THROUGH TWO  
EXAMPLES. AN ATTEMPT IS MADE TO DETERMINE THE ROLE  
OF THE ACCOUNTANT IN THE FUTURE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 411 5/1 14/1  
RAND CORP SANTA MONICA CALIF  
REVIEW OF 'SYSTEMS ENGINEERING METHODS' BY HAROLD  
CHESTNUT, (U)  
DEC 67 4P BLUM, F. H. ;  
REPT. NO. P-3754

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SYSTEMS ENGINEERING, \*MANAGEMENT  
ENGINEERING), COST EFFECTIVENESS, DESIGN,  
DECISION MAKING, RELIABILITY, REVIEWS (U)

THE BOOK BEING REVIEWED COVERS (1) THE  
ENVIRONMENT FOR SYSTEMS ENGINEERING, (2) SYSTEM  
ORGANIZATION, SCHEDULING, AND RECORD-KEEPING, (3)  
FORMULATING AND STRUCTURING THE SYSTEM, (4)  
FACTORS FOR JUDGING THE VALUE OF A SYSTEM, (5)  
COST-ESTIMATION AND COST-EFFECTIVENESS ANALYSIS,  
(6) OPERATIONAL MEANINGS AND EFFECTS OF TIME, AND  
PERT-TYPE NETWORK ANALYSIS, (7) RELIABILITY,  
AND (8) FUTURE OPPORTUNITIES FOR SYSTEMS  
ENGINEERING. IT IS BELIEVED THAT FEW SUBJECTS ARE  
COVERED DEEPLY ENOUGH TO MAKE THE BOOK USEFUL AS A  
TEXT OR SELF-STUDY GUIDE WITHOUT CONSIDERABLE  
SUPPLEMENTARY READING. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 414 22/2 9/3

AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL  
OPERATIONS

A TECHNIQUE FOR ESTIMATING SPACE POWER SYSTEM  
COSTS.

(U)

DESCRIPTIVE NOTE: REPT. FOR 4 JAN 66-4 SEP 67,

OCT 67 JOP FISH, J. G. I

REPT. NO. TR-0158(3515-01)-1

CONTRACT: F04695-67-C-0158

MONITOR: SAMSO TR-67-112

UNCLASSIFIED REPORT

DESCRIPTORS: (\*POWER EQUIPMENT, COSTS),  
(\*SPACECRAFT, POWER EQUIPMENT), AUXILIARY  
POWER PLANTS, SOLAR CELLS, NUCLEAR REACTORS,  
THERMOELECTRICITY, THERMIONIC CONVERTERS,  
DYNAMICS, RADIATORS, ISOTOPES, ELECTRICITY,  
COST EFFECTIVENESS, SPACECRAFT COMPONENTS,  
STATISTICAL ANALYSIS

(U)

A TECHNIQUE IS PRESENTED FOR ESTIMATING DEVELOPMENT  
AND PROCUREMENT COSTS FOR SPACE POWER SUBSYSTEMS.  
THE DATA EMPLOYED IN DERIVING THE COSTING  
RELATIONSHIPS PRIMARILY STEM FROM THE 1966 DOD  
SPACE POWER STUDY AND THE AEROSPACE  
CORPORATION'S EXPERIENCE AND DATA SOURCES. THESE  
SOURCES REPRESENT THE MOST CURRENT AND EXTENSIVE  
SURVEY OF BOTH COSTS AND TECHNOLOGIES OF THE SPACE  
POWER FIELD THAT EXIST TODAY. ENERGY SOURCES AND  
POWER CONVERSION SCHEMES ARE ANALYZED SEPARATELY AND  
JOINTLY IN FEASIBLE COMBINATIONS OF POWER SYSTEMS  
APPLICABLE TO FUTURE SPACE MISSIONS. COST-SCALING  
FACTORS ARE PROVIDED FOR INTEGRATING EACH TYPE OF  
POWER SUBSYSTEM INTO A PAYLOAD. ESTIMATED  
PROJECTIONS OF SPACE POWER SUBSYSTEM COSTS FOR  
FIFTEEN YEARS INTO THE FUTURE ARE ALSO PROVIDED.  
DUE TO THE VAST UNCERTAINTY INVOLVED IN ESTIMATING  
FUTURE SYSTEM COSTS, ALL PERTINENT DETAILS OF THE  
ESTIMATING PROCEDURE ARE GIVEN SO THAT THE TECHNIQUE  
CAN BE READILY ALTERED BY REPLACING ANY OF THE  
PARAMETERS THAT APPEAR QUESTIONABLE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 525 9/5 9/2  
MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF  
ELECTRONICS  
A PROGRAM FOR ON-LINE ANALYSIS OF NONLINEAR  
ELECTRONIC CIRCUITS, (U)  
67 6P KATZENELSON, JACOB ;  
EVANS, DAVID S. ; LEE, HARRY B. ;  
CONTRACT: DA-36-039-AMC-03200(E), NSG-496  
PROJ: DSR-6152, DSR-9442

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN IEEE INTERNATIONAL  
CONVENTION RECORD PT. 5 PA9-94 1967.  
SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY AIR  
FORCE, ARPA, AND NONR.

DESCRIPTORS: (\*ELECTRICAL NETWORKS, ANALYSIS),  
DATA PROCESSING SYSTEMS, TIME SHARING, COSTS,  
NONLINEAR SYSTEMS, REMOTE CONTROL SYSTEMS,  
PROGRAMMING (COMPUTERS), DISPLAY SYSTEMS,  
INPUT-OUTPUT DEVICES (U)  
IDENTIFIERS: COMPATIBLE TIME-SHARING SYSTEM, ON-  
LINE SYSTEMS, AEDNET, BATCH PROCESSING (U)

USERS HAVE FOUND THAT AEDNET PROGRAM TO BE  
ATTRACTIVE BECAUSE OF THE EASE WITH WHICH IT CAN BE  
USED, THE SPEED OF RESPONSE, AND THE FACT THAT A USER  
NEED NOT SPECIFY THE COURSE OF HIS ANALYSIS AT THE  
OUTSET. THE COST OF TERMINAL HARDWARE AND PROGRAM  
DEVELOPMENT PRESENTLY IS HIGH. HOWEVER, COSTS  
SHOULD BE GREATLY REDUCED WHEN ON-LINE COMPUTATIONAL  
FACILITIES BECOME COMMERCIALY AVAILABLE AND USERS  
COOPERATE IN PROGRAM DEVELOPMENT. THUS IT APPEARS  
LIKELY THAT ON-LINE CIRCUIT ANALYSIS PROGRAMS WILL  
FIND EXTENSIVE USE IN BOTH INDUSTRY AND EDUCATION.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 680 12/2  
BOEING SCIENTIFIC RESEARCH LABS SEATTLE WASH MATHEMATICS  
RESEARCH LAB  
ON A BRANCH-AND-BOUND METHOD FOR SEPARABLE CONCAVE  
PROGRAMS. (U)  
SEP 67 21P WALKUP, D. W. ;  
REPT. NO. D1-82-0670, MATHEMATICAL NOTE-527

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MATHEMATICAL PROGRAMMING, PROBLEM  
SOLVING), LINEAR PROGRAMMING, ALGORITHMS,  
OPTIMIZATION, COSTS, SET THEORY, INEQUALITIES,  
THEOREMS (U)  
IDENTIFIERS: SEPARABLE CONCAVE PROGRAMS, FIXED  
CHARGE PROBLEM (U)

A SEPARABLE CONCAVE PROGRAM IS DEFINED TO BE ANY  
PROGRAM OF THE FORM: MINIMIZE  $Z(x)$  SUBJECT  
TO  $x$  IN  $K$ , WHERE  $K$  IS ANY SUBSET OF  $N$ -SPACE AND  
 $Z(x)$  IS A SEPARABLE CONCAVE FUNCTION, I.E. CAN BE  
WRITTEN AS A SUM OF  $N$  CONCAVE FUNCTIONS EACH OF WHICH  
DEPENDS ON ONLY ONE OF THE COMPONENTS OF THE VECTOR  
 $x$ . (A FAMILIAR SPECIAL CASE IS THE SO-CALLED FIXED  
CHARGE LINEAR PROGRAM.) IT IS SHOWN HOW A BRANCH-  
AND-BOUND ALGORITHM FOR A SEPARABLE CONCAVE PROGRAM  
CAN ALWAYS BE OBTAINED IF THE RELATED PROGRAM OF  
MINIMIZING A LINEAR FUNCTION OVER  $K$  CAN BE  
PERFORMED EFFICIENTLY. A SPECIAL CASE IS  
CONSIDERED IN WHICH  $K$  IS A VERY LARGE DISCRETE SET  
BUT CAN BE DESCRIBED AS THE VECTOR SUM OF SMALLER  
SETS. THE BRANCH-AND-BOUND ALGORITHM FOR THIS  
SPECIAL CASE HAS BEEN PROGRAMMED AND APPLIED TO A  
PROBLEM OF SELECTING A MINIMUM COST FLEET OF SPACE  
VEHICLES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 732 14/1 17/9  
RAND CORP SANTA MONICA CALIF  
AN ANALYSIS OF COST VERSUS PERFORMANCE RELATIONSHIPS  
FOR PHASED ARRAY RADARS, (U)  
NOV 67 87P RONDINELLI, L. A. J  
REPT. NO. RM-5380-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RADAR, PHASED ARRAYS), (\*COST  
EFFECTIVENESS, RADAR), COSTS, SEARCH RADAR,  
OPTIMIZATION, DESIGN (U)  
IDENTIFIERS: PHASED ARRAY RADAR (U)

COST ESTIMATING RELATIONSHIPS BETWEEN THE  
PERFORMANCE REQUIREMENTS OF PHASED ARRAY RADARS AND  
THEIR HARDWARE AND INSTALLATION COST ARE DEVELOPED  
FOR BOTH THE SEARCH AND TRACKING FUNCTIONS.  
APPROPRIATE PERFORMANCE PARAMETERS FOR EACH  
FUNCTION ARE DERIVED FROM SYSTEM OPERATIONAL  
REQUIREMENTS, AND LAGRANGE MULTIPLIERS ARE USED TO  
OBTAIN THE OPTIMUM DESIGN FORMULAS AND MINIMUM-COST  
EQUATIONS. RESULTS OF SEVERAL PHASED ARRAY COST  
EXAMPLES ARE ANALYZED TO TEST THE SENSITIVITY OF THE  
COST ESTIMATES TO VARIATIONS IN REQUIRED SYSTEM  
PERFORMANCE AND IN THE COST COEFFICIENTS OF THE COST  
EQUATIONS. THE USE OF HIGHER POWER MODULES AT  
LOWER COST PER WATT RESULTS IN LESS EXPENSIVE SEARCH  
ARRAYS. FOR TRACKING ARRAY DESIGNS, THE SITUATION  
IS REVERSED. BY A COMPROMISE DESIGN, THE SAME  
ARRAY CAN BE USED FOR BOTH FUNCTIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 795 1/3 17/7  
SYLVANIA ELECTRONIC SYSTEMS-CENTRAL WILLIAMSVILLE N Y  
VALUE ENGINEERING QUARTERLY REPORT FOR LIGHT  
OBSERVATION HELICOPTER AVIONICS PACKAGE. (U)  
DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 5, 22 JUL-21 OCT  
67.  
NGV 67 8P ALLIS, JAMES B. ;  
SRNIUK, WALTER ;  
CONTRACT: DA-28-043-AMC-01943(E)  
MONITOR: ECOM 01943-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-659 799.

DESCRIPTORS: (\*HELICOPTERS, AIRCRAFT  
EQUIPMENT), (\*AIRCRAFT EQUIPMENT, \*VALUE  
ENGINEERING), MANAGEMENT PLANNING, COSTS,  
RADIO NAVIGATION, MANPOWER, TRAINING (U)  
IDENTIFIERS: AVIONICS, AN/ARN-89 (U)

THE REPORT HIGHLIGHTS ACCOMPLISHMENTS, FUTURE  
PLANS, PROBLEMS EXPERIENCED AND ANTICIPATED, AND  
PLANS FOR RESOLUTION OF PROBLEMS, IF ANY. THE  
REPORT PROVIDES A MEANS OF MEASURING SYLVANIA'S  
ADHERENCES TO AND COMPLIANCE WITH THE SYLVANIA  
VALUE ENGINEERING DESIGN PLANS, AS SUBMITTED  
TO ECOM. THE V.E. PROGRAM EFFORT APPLIED BY  
EMI-COSSOR, SUBCONTRACTOR FOR THE ADF SET  
AN/ARN-89, WAS MONITORED AND EVALUATED DURING  
AUGUST. SYLVANIA V.E. QUARTERLY REPORT  
NO. 5 WAS APPROVED BY ECOM AND DISTRIBUTED PER  
THE ECOM DISTRIBUTION LIST. INHERENT V.E.  
CHANGES TO DATE HAVE RESULTED IN ESTIMATED COST  
AVOIDANCES OF \$6,034,603. TEN (10)  
SYLVANIANS ARE ENROLLED UNDER COMPANY SPONSORSHIP  
IN THE CREATIVE VALUE ENGINEERING COURSE  
OFFERED BY THE STATE UNIVERSITY OF NEW YORK  
AT BUFFALO. TEAM EFFORT IS BEING APPLIED TO A  
LOHAP WORK PROJECT AS PART OF THEIR CURRICULUM.  
THE COST MODEL WAS UPDATED DURING THIS PERIOD.  
COMMODITY PRICES WERE RE-EVALUATED. VALUE  
ANALYSIS EFFORT WITH SUPPLIERS WAS ACCELERATED,  
PARTICULARLY IN THE AREA OF MECHANICAL ITEMS.  
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-563 825 12/2

RESEARCH ANALYSIS CORP MCLEAN VA  
A BRANCH-AND-BOUND ALGORITHM FOR MULTILEVEL FIXED-  
COST PROBLEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL PAPER,

OCT 67 24P JONES, ARNOLD P. ;

SOLAND, RICHARD M. ;

REPT. NO. RAC-TP-285

CONTRACT: DA-44-188-ARO-1

PROJ: DA-077.115

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MATHEMATICAL PROGRAMMING,  
\*ALGORITHMS), COSTS, PROBLEM SOLVING,  
OPTIMIZATION, FLOW CHARTING, CONVEX SETS,  
PROGRAMMING(COMPUTERS), INEQUALITIES (U)

MULTILEVEL FIXED-COST PROBLEMS ARE MATHEMATICAL  
OPTIMIZATION PROBLEMS IN WHICH THE SEPARABLE PORTION  
OF THE OBJECTIVE FUNCTION IS THE SUM OF PIECEWISE  
CONTINUOUS FUNCTIONS OF A SINGLE VARIABLE. THIS  
PAPER DESCRIBES A BRANCH-AND-BOUND ALGORITHM THAT  
WILL FIND A GLOBAL SOLUTION TO THIS TYPE OF PROBLEM.  
THE ALGORITHM HAS THE FEATURE THAT A GOOD FEASIBLE  
SOLUTION IS GENERATED AT THE START. MOREOVER, AT  
EACH STEP OF THE ALGORITHM AN ADDITIONAL FEASIBLE  
SOLUTION MAY BE GENERATED FOR COMPARISON WITH THE  
BEST SOLUTION FOUND PREVIOUSLY. (AUTHOR) (U)

UNCLASSIFIED



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 970 5/1 12/1 14/1  
CASE-WESTERN RESERVE UNIV CLEVELAND OHIO  
ADVANCED MATERIAL SYSTEMS PLANNING, (U)  
JAN 67 26P DEAN, BURTON V. ;  
HAUSER, LAWRENCE E. I  
CONTRACT: DAHC04-67-C-0022, NONR-1141(19)  
PROJ: DA-1A750203M613  
MONITOR: AROD 7146:2

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN IEEE TRANSACTIONS ON  
ENGINEERING MANAGEMENT VEM-14 N1 P21-43 MAR 1967.  
SUPPLEMENTARY NOTE: PRESENTED AT THE MILITARY  
OPERATIONS RESEARCH SYMPOSIUM (MORS) (13TH),  
FORT BRAGG, N. C., OCT 66.

DESCRIPTORS: (\*MANAGEMENT ENGINEERING,  
\*OPERATIONS RESEARCH), MATHEMATICAL MODELS,  
SYSTEMS ENGINEERING, COST EFFECTIVENESS,  
COMPUTER PROGRAMS, DECISION MAKING, PROBLEM  
SOLVING, PROBABILITY (U)

THE REPORT IS CONCERNED WITH THE DEVELOPMENT OF  
MATHEMATICAL MODELS, COMPUTER PROGRAMS, AND DATA  
REQUIREMENTS TO CONDUCT DEVELOPMENT SYSTEMS PLANNING  
IN LARGE RESEARCH AND DEVELOPMENT ORGANIZATIONS.  
THE SPECIFIC PLANNING DECISION PROBLEMS ARE (1)  
THE SELECTION OF TECHNICAL ALTERNATIVES, (2) THE  
FUNDING OF SYSTEM COMPONENTS, AND (3) THE FUNDING  
OF SYSTEMS. COST-EFFECTIVENESS RELATIONSHIPS ARE  
DEVELOPED. A MANUAL IS PRESENTED FOR USE IN THE  
TRAINING OF PLANNERS IN THE UTILIZATION OF COMPUTER  
RESULTS. TESTS WERE CONDUCTED UTILIZING SIMULATED  
COST, RISK, AND VALUE DATA. (AUTHOR) (U)

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DLC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 039 1545 972  
RAND CORP SANTA MONICA CALIF  
COMBAT -- A SERIES OF ON-LINE COMPUTER PROGRAMS FOR  
FORCE COST ANALYSIS: (U)  
DEC 67 28P TENG, C. TENZER, A. J.  
REPT- NO. R-3646

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE 1967 COMPUTER  
SUMMER WORKSHOP SPONSORED BY THE INDUSTRIAL COLLEGE  
OF THE ARMED FORCES AND THE UNITED STATES MILITARY  
ACADEMY, WEST POINT, N. Y., JUL 20 1967.

DESCRIPTORS: (\*DATA PROCESSING SYSTEMS, ARMED  
FORCES OPERATIONS), (\*ARMED FORCES OPERATIONS,  
COST EFFECTIVENESS), COSTS, COMPUTER PROGRAMS,  
DATA PROCESSING SYSTEMS, MILITARY REQUIREMENTS,  
DECISION MAKING, EFFECTIVENESS, MATHEMATICAL  
MODELS, ITERATIVE METHODS (U)  
IDENTIFIERS: ON-LINE SYSTEMS, COMBAT(COST  
ORIENTED MODELS BUILT TO ANALYZE TRADE-  
OFFS), TRADE OFFS (U)

THE REPORT DESCRIBES A NEW FORCE STRUCTURE COST-  
ESTIMATING MODEL CALLED COMBAT. IT IS PROGRAMMED  
FOR AN ON-LINE COMPUTER SYSTEM, AND DESIGNED WITH THE  
WAR GAMING ACTIVITY IN MIND. COMBAT STANDS FOR  
COST ORIENTED MODELS BUILT TO ANALYZE TRADE-OFFS. (U)

UNCLASSIFIED

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000125

AD-668 324 15/5 5/1 14  
RAND CORP SANTA MONICA CALIF  
A MANAGEMENT PERSPECTIVE ON METRIC-MULTI-ECHELON  
TECHNIQUE FOR RECOVERABLE ITEM CONTROL. (U)  
JAN 68 27P SHERBROOKE, CRAIG C. I  
REPT. NO. RM-5078/1-PR  
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-645 684.

DESCRIPTORS: (\*INVENTORY CONTROL, MATHEMATICAL  
MODELS), (\*LOGISTICS, MANAGEMENT CONTROL  
SYSTEMS), SPARE PARTS, COST EFFECTIVENESS, AIR  
FORCE BUDGETS, STOCK LEVEL CONTROL, DECISION  
MAKING, SUPPLY DEPOTS, STANDARDIZATION (U)  
IDENTIFIERS: METRIC (U)

A SHORTER, INFORMAL, NONTECHNICAL VERSION OF AD-  
668 684, DESCRIBES THE MATHEMATICAL MODEL OF A BASE-  
DEPOT SUPPLY SYSTEM FOR RECOVERABLE ITEMS OF THE KIND  
THAT REPRESENT ALMOST 80 PERCENT OF THE AIR  
FORCE'S INVESTMENT IN SPARES. METRIC-GENERATED  
COST-EFFECTIVENESS CURVES SHOULD BE OF GREAT HELP IN  
DEFENDING BUDGET REQUESTS. THE USE OF MORE  
PARAMETERS, INCLUDING UNIT COST, AND A MORE  
SOPHISTICATED MEASURE OF DEMAND PREDICTION FOR LOW-  
DEMAND ITEMS SHOULD PROVIDE BETTER STOCKAGE  
DECISIONS. THE USE OF ONE STANDARD PROCEDURE FOR  
BOTH REQUIREMENTS AND DISTRIBUTION SHOULD HELP IN  
SOLVING MANY OF THE PRESSING INTERFACE PROBLEMS.  
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 456 12/2 13/8 5/1  
STANFORD UNIV CALIF DEPT OF STATISTICS  
A MARKOV DECISION PROCESS WITH COSTLY  
INSPECTION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 68 51P TAFEEN, STEPHEN M. ;  
REPT. NO. TR-107  
CONTRACT: NONR-225(53)  
PROJ: NR-142-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DECISION THEORY, OPTIMIZATION),  
(\*PRODUCTION CONTROL, OPTIMIZATION), NUMERICAL  
ANALYSIS, MANAGEMENT PLANNING, DECISION MAKING,  
MAINTENANCE, STATISTICAL PROCESSES,  
APPROXIMATION(MATHEMATICS), BANACH SPACE,  
CONTROL, COSTS, LINEAR PROGRAMMING, OPERATIONS  
RESEARCH, PROBABILITY, SET THEORY, THEOREMS  
IDENTIFIERS: MARKOV DECISION PROCESSES, OPTIMAL  
CONTROL THEORY

(U)

(U)

A SIMPLE PRODUCTION PROCESS WHICH HAS ONLY TWO  
STATES IN WHICH PRODUCTION IS POSSIBLE, AND TWO OTHER  
STATES IN WHICH NO PRODUCTION CAN TAKE PLACE IS  
STUDIED. THE ITEMS PRODUCED ARE CLASSIFIED AS  
EITHER ACCEPTABLE OR DEFECTIVE. COSTS ARE  
ASSOCIATED WITH PRODUCING DEFECTIVE ITEMS, INSPECTING  
ITEMS AND REPAIRING THE PROCESS. IMMEDIATELY AFTER  
REPAIR, AND ONLY THEN, IS THE PROCESS STATE KNOWN.  
AN OPTIMAL CONTROL RULE, WHICH TELLS WHEN TO  
INSPECT ITEMS AND WHEN TO REPAIR THE MACHINERY, BASED  
ON THE PAST HISTORY OF THE PROCESS IS SOUGHT. THE  
PROBLEM IN WHICH INSPECTION COSTS ARE NIL, AND HENCE  
100% INSPECTION IS USED, HAS BEEN STUDIED BY  
GIRSHICK AND RUBIN. WHEN THE PROCESS SATISFIES  
CERTAIN CONDITIONS, AN OPTIMAL CONTROL RULE IS  
CHARACTERIZED, AND A METHOD FOR OBTAINING THE RULE IS  
PRESENTED. SEVERAL OTHER METHODS ARE GIVEN WHICH  
PRODUCE ALMOST OPTIMAL SOLUTIONS WHEN THESE  
CONDITIONS ARE VIOLATED. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 457 12/2 15/5 5/1  
STANFORD UNIV CALIF DEPT OF STATISTICS  
MULTIPRODUCT INVENTORY MODELS WITH SET-UP. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 68 141P WHEELER, ALAN ;  
REPT. NO. TR-106  
CONTRACT: NONR-225(53)  
PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INVENTORY CONTROL,  
OPTIMIZATION), (\*DECISION THEORY, INVENTORY  
CONTROL), MANAGEMENT PLANNING, DECISION MAKING,  
OPERATIONS RESEARCH, MATHEMATICAL MODELS,  
STOCHASTIC PROCESSES, RANDOM VARIABLES,  
NUMERICAL METHODS AND PROCEDURES, DYNAMIC  
PROGRAMMING, DISTRIBUTION FUNCTIONS, SPECIAL  
FUNCTIONS(MATHEMATICAL), COSTS, THEOREMS (U)  
IDENTIFIERS: SET-UP COSTS (U)

THE REPORT PRESENTS A MATHEMATICAL MODEL OF AN INVENTORY PROBLEM FREQUENTLY ENCOUNTERED IN PRACTICE AND STUDIES THE NATURE OF THE BEST ORDERING POLICY TO USE FOR IT. AT THE BEGINNING OF EACH OF A SEQUENCE OF PERIODS AN INVENTORY MANAGER MUST DECIDE WHETHER OR NOT TO PLACE AN ORDER AND, IF SO, HOW MUCH OF WHICH PRODUCTS. HIS ORDER IS FILLED IMMEDIATELY AND THEN DURING THE PERIOD A RANDOM DEMAND DRAWS UPON HIS INVENTORY UNTIL AT THE BEGINNING OF THE NEXT PERIOD HE MAKES ANOTHER ORDERING DECISION. WHEN HE ORDERS, A UNIT COST FOR EACH ITEM AND A SET-UP COST FOR THE ORDER ARE CHARGED. THE SET-UP COST IS THUS INDEPENDENT OF THE SIZE OF THE ORDER AND MAY REPRESENT THE PRICE OF SUCH THINGS AS PAPERWORK, TOOLING UP FOR A PRODUCTION RUN, OR CONSTRUCTION OF FACILITIES. ON THE BASIS OF THE INVENTORY LEVELS AT THE END OF A PERIOD AN INVENTORY COST IS CHARGED. THIS REPRESENTS A HOLDING COST FOR THOSE PRODUCTS STILL IN STOCK AND A PENALTY COST FOR THOSE WHOSE SUPPLY IS DEPLETED. SINCE THE ACTUAL DEMAND IS NOT KNOWN BUT RANDOM, THE INVENTORY MANAGER DOES NOT HAVE FULL CONTROL OVER THE COSTS HE WILL BE CHARGED. IT IS ASSUMED, HOWEVER, THAT HE CAN OBTAIN HIS EXPECTED COSTS BY AVERAGING OVER THE RANDOM DEMANDS, AND HIS AIM THEN IS TO USE AN ORDERING POLICY WHICH MINIMIZES HIS EXPECTED COSTS. AS THE MATHEMATICAL INVENTORY LITERATURE IS QUITE LARGE IT IS IMPORTANT TO EMPHASIZE FOUR DISTINCTIVE FEATURES OF THE MODEL IN THIS REPORT: PERIODIC REVIEW, RANDOM DEMAND, SET-UP COSTS, AND INTERDEPENDENCE OF PRODUCT COSTS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 459 12/2 13/8 5/1  
STANFORD UNIV CALIF DEPT OF STATISTICS  
ARBITRARY STATE MARKOVIAN DECISION PROCESSES. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 68 16P ROSS, SHELDON M. ;  
REPT. NO. TR-105  
CONTRACT: NONR-225(53)  
PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DECISION THEORY, OPTIMIZATION),  
(\*STATISTICAL PROCESSES, MANAGEMENT PLANNING),  
COSTS, OBSOLESCENCE THEORY, SET THEORY,  
SPECIAL FUNCTIONS(MATHEMATICAL), DECISION  
MAKING, OPERATIONS RESEARCH, THEOREMS (U)  
IDENTIFIERS: MARKOV DECISION PROCESSES (U)

ARBITRARY STATE, FINITE ACTION MARKOVIAN DECISION  
PROCESSES ARE STUDIED WITH RESPECT TO THE (LONG-  
RUN) AVERAGE COST CRITERION. THE PROBLEM IS  
TREATED BOTH AS A LIMITING CASE OF THE DISCOUNTED  
COST PROBLEM AND ALSO AS A LIMIT OF THE N-STAGE  
PROBLEM. SUFFICIENT CONDITIONS ARE GIVEN FOR THE  
EXISTENCE OF AN OPTIMAL RULE AND FOR IT TO BE OF  
STATIONARY DETERMINISTIC TYPE. (AUTHOR) (U)

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DUC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AU-664 546 13/5  
AEROSPACE CORP EL SEGUNDO CALIF LAB OPERATIONS  
CRITERIA FOR FASTENER SYSTEM DESIGN. (U)  
OCT 67 29P RAYMOND, L. KENDALL, L. G. ;  
STANLEY, J. K. ;  
REPT. NO. TR-0158(3250-10)-2  
CONTRACT: F04595-67-C-0158  
MONITOR: SAMS0 TR-67-94

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MECHANICAL FASTENERS, SYSTEMS  
ENGINEERING); PERFORMANCE(ENGINEERING);  
DESIGN; ANALYSIS; MATERIALS; HEAT TREATMENT;  
LUBRICATION; COATINGS; CORROSION INHIBITION;  
TORQUE; COMPATIBILITY; COST EFFECTIVENESS;  
FRACTURE(MECHANICS); CORROSION (U)

CRITERIA FOR FASTENER SYSTEM DESIGN ARE SUGGESTED.  
THE APPLICATION OF SYSTEM ANALYSIS TO MATED PARTS  
HELD TOGETHER WITH A HIGH-STRENGTH FASTENER IS  
DISCUSSED. THE TORQUE-TENSION RELATIONSHIP OF EACH  
SYSTEM SHOULD BE MEASURED, AND FRACTURE MECHANICS  
SHOULD BE USED TO INDEX ENVIRONMENTAL COMPATIBILITY.  
THIS APPROACH CAN ALSO BE USED TO PRODUCE A COST-  
EFFECTIVE FASTENER SYSTEM DESIGN. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 617 13/10 14/1  
TRAVELERS RESEARCH CENTER INC HARTFORD CONN  
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY  
SYSTEMS. VOLUME 1, PART 1. NATIONAL REQUIREMENTS FOR  
MARINE METEOROLOGICAL AND OCEANOGRAPHIC DATA. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
APR 67 271P AUBERT, EUGENE J. ;  
REPT. NO. TRC-7485-253  
CONTRACT: TCG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, AD-664 621.

DESCRIPTORS: (\*BUOYS, NETWORKS); (\*MARINE  
ENGINEERING, BUOYS), COST EFFECTIVENESS,  
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC  
DATA, COAST GUARD, OCEAN BOTTOM, GREAT  
LAKES, METEOROLOGICAL PARAMETERS, OCEANS,  
FEASIBILITY STUDIES, NATIONAL DEFENSE, SENSORS,  
WEATHER FORECASTING (U)  
IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN  
ENGINEERING OF THE INTERAGENCY COMMITTEE ON  
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON  
MARINE RESEARCH, EDUCATION, AND FACILITIES OF  
THE NATIONAL COUNCIL ON MARINE RESOURCES AND  
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN  
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE  
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE  
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND  
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE  
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO  
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.  
(AUTHOR) (U)

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D. C. REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 618 13/10 14/1  
TRAVELERS RESEARCH CENTER INC HARTFORD CONN  
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY  
SYSTEMS. VOLUME 1: PART 2. BUOY AND BUOY COMPONENTS  
DATA COMPILATION AND ANALYSIS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
JUL 67 1984 WALDEN, ROBERT G. ;  
AUBERT, EUGENE J. ;  
REPT. NO. TRC-7485-256  
CONTRACT: TCG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, PART 1, AD-  
664 617.

DESCRIPTORS: (\*BUOYS, NETWORKS); (\*MARINE  
ENGINEERING, BUOYS). COST EFFECTIVENESS,  
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC  
DATA, COAST GUARD, RELIABILITY, MOORING,  
LIFE EXPECTANCY, SENSORS, OPERATION,  
FEASIBILITY STUDIES, NATIONAL DEFENSE, DATA  
PROCESSING SYSTEMS, DEPLOYMENT, CLASSIFICATION (U)  
IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN  
ENGINEERING OF THE INTERAGENCY COMMITTEE ON  
OCEANOGRAPHY (ILC) (NOW THE COMMITTEE ON  
MARINE RESEARCH, EDUCATION, AND FACILITIES OF  
THE NATIONAL COUNCIL ON MARINE RESOURCES AND  
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN  
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE  
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE  
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND  
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE  
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO  
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 618 13/10 14/1  
TRAVELERS RESEARCH CENTER INC HARTFORD CONN  
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY  
SYSTEMS. VOLUME 1, PART 3. A COST EFFECTIVENESS  
EVALUATION OF BUOY AND NON-BUOY SYSTEMS TO MEET THE  
NATIONAL REQUIREMENTS FOR MARINE DATA. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
SEP 67 228P JENKINS, CARL F. ;  
AUBERT, EUGENE J. ; CARUTH, W. R. BRIAN ;  
CLEM, LEROY H. ; WALDEN, ROBERT G. ;  
REPT. NO. TRC-7485-274  
CONTRACT: TCG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, PART 2, AD-  
664 618.

DESCRIPTORS: (\*BUOYS, NETWORKS); (\*MARINE  
ENGINEERING, BUOYS); COST EFFECTIVENESS;  
OCEANOLOGY; MARINE METEOROLOGY; OCEANOGRAPHIC  
DATA; COAST GUARD; RELIABILITY; OCEANOGRAPHIC  
VESSELS; PROBABILITY; COSTS; FEASIBILITY  
STUDIES; NATIONAL DEFENSE; SENSORS; DEPLOYMENT;  
COMMUNICATION SYSTEMS; OCEANS (U)  
IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN  
ENGINEERING OF THE INTERAGENCY COMMITTEE ON  
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON  
MARINE RESEARCH, EDUCATION, AND FACILITIES OF  
THE NATIONAL COUNCIL ON MARINE RESOURCES AND  
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN  
UNDER A MULTI-AGENCY-FUNDED CONTRACT. ITS PURPOSE  
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE  
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND  
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE  
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO  
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 620 13/10 14/1

TRAVELER'S RESEARCH CENTER INC HARTFORD CONN  
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY  
SYSTEMS. VOLUME 2. COST-BENEFITS FOR A NATIONAL  
DATA BUOY SYSTEM: AN ESSAY. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

OCT 67 134P NORTHROP, GAYLORD M. ;

CARUTH, W. R. BRIAN ; DAVIS, EARL L. ;

REED, LAWRENCE J. ; RUSSO, JOHN A. , JR.

REPT. NO. TRC 7485-280

CONTRACT: TCG-10790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, PART 3, AD-  
664 615

DESCRIPTORS: (\*BUOYS, NETWORKS), (\*MARINE  
ENGINEERING, BUOYS), COST EFFECTIVENESS,  
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC  
DATA, COAST GUARD, DECISION MAKING, NATIONAL  
DEFENSE, SENSORS, CLIMATOLOGY, FEASIBILITY  
STUDIES, DATA TRANSMISSION SYSTEMS, NATIONAL  
DEFENSE, DEPLOYMENT (U)

IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN  
ENGINEERING OF THE INTERAGENCY COMMITTEE ON  
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON  
MARINE RESEARCH, EDUCATION, AND FACILITIES OF  
THE NATIONAL COUNCIL ON MARINE RESOURCES AND  
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN  
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE  
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE  
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND  
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE  
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO  
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.  
(AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 621 13/10 14/1  
TRAVELERS RESEARCH CENTER INC HARTFORD CONN  
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY  
SYSTEMS. VOLUME 3. TECHNICAL DEVELOPMENT PLANS FOR  
THE NATIONAL DATA BUOY SYSTEM. (U)  
DESCRIPTIVE NOTE: FINAL REPT,  
OCT 67 111P AUBERT, EUGENE J. ;  
BOSTICK, ARTHUR W. ; CLEM, LEROY H. ;  
WALDEN, ROBERT G. ;  
REPT. NO. TRC-7485-270  
CONTRACT: DLG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-664 620.

DESCRIPTORS: (\*BUOYS, NETWORKS), (\*MARINE  
ENGINEERING, BUOYS), COST EFFECT\* NESS,  
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC  
DATA, COAST GUARD, RELIABILITY,  
MAINTAINABILITY, PERFORMANCE (ENGINEERING),  
FEASIBILITY STUDIES, NATIONAL DEFENSE, DATA  
TRANSMISSION SYSTEMS, DEPLOYMENT (U)  
IDENTIFIERS: ORAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN  
ENGINEERING OF THE INTERAGENCY COMMITTEE ON  
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON  
MARINE RESEARCH, EDUCATION, AND FACILITIES OF  
THE NATIONAL COUNCIL ON MARINE RESOURCES AND  
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN  
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE  
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE  
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND  
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE  
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO  
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.  
(AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DOD REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 700 5/3 14/1  
LOGISTICS MANAGEMENT INST WASHINGTON D C  
DEFENSE INDUSTRY PROFIT REVIEW: VOLUME 1. (U)  
NOV 67 76P  
CONTRACT: SO-271  
TASK: LMI-66-25

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2: AD-664 701.

DESCRIPTORS: (\*MUNITIONS INDUSTRY, \*ECONOMICS),  
COSTS, COST EFFECTIVENESS, BUDGETS, COMMERCE,  
CONTRACTS, MONEY, DEPARTMENT OF DEFENSE,  
MANAGEMENT PLANNING, INDUSTRIES, REVIEWS,  
STATISTICAL DATA (U)  
IDENTIFIERS: PROFITS, INVESTMENT RETURNS, COST-  
BENEFIT ANALYSIS (U)

CONTENTS: SUMMARY FINDINGS (COMPARISON OF  
PROFIT ON DEFENSE BUSINESS WITH PROFIT ON COMMERCIAL  
BUSINESS; ANALYSIS OF DEFENSE PROFITS, CAPITAL MARKET  
ANALYSIS); PROFIT/CAPITAL INVESTMENT RATIOS AND  
CAPITAL INVESTMENT TURNOVER; PROFIT/SALES RATIOS  
(PROFIT BY TYPE OF BUSINESS (DEFENSE/  
COMMERCIAL); PROFIT BY TYPE CONTRACT);  
DEPARTMENT OF DEFENSE PROFIT REVIEW SYSTEM;  
UNALLOWABLE AND NONRECOVERABLE COSTS; CAPITAL  
MARKET ANALYSIS; DISCUSSIONS WITH DEFENSE INDUSTRY  
(GENERAL; WHY DEFENSE BUSINESS PROFITABILITY IS  
WHAT IT IS; WHAT DEFENSE PROFITS SHOULD BE; WHAT  
CHANGES, IF ANY, SHOULD BE MADE IN DOD POLICIES  
AND PRACTICES AS THEY AFFECT PROFIT; UNSOLICITED  
COMMENTS OF DEFENSE INDUSTRY). (U)

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DDC REPORT BIBLIOGRAPHIC SEARCH CONTROL NO. 000123

AD-664 748 15/5 5/1 12/2 5/3  
RESEARCH ANALYSIS CORP MCLEAN VA  
COSTS OF OPERATION AND MAINTENANCE ACTIVITIES (ARMY):  
TECHNIQUES FOR ANALYSIS AND ESTIMATION. (U)  
DESCRIPTIVE NOTE: TECHNICAL PAPER,  
JAN 68 85P PHILLIPS, JOHN G. ;  
REPT. NO. RAC-TP-242-REV  
CONTRACT: DA-44-188-ARO-1  
PROJ: DA-007.106

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REVISION OF PAPER PUBLISHED APR  
67.

DESCRIPTORS: (\*ARMY OPERATIONS, \*ADVANCED  
PLANNING), (\*ARMY BUDGETS, LOGISTICS),  
MILITARY TRAINING, MILITARY REQUIREMENTS,  
DECISION MAKING, OPERATIONS RESEARCH, MANAGEMENT  
PLANNING, STOCK LEVEL CONTROL, MAINTENANCE,  
COSTS, ECONOMICS, MONEY, MATHEMATICAL  
PREDICTION, SUPPLY DEPOTS (U)  
IDENTIFIERS: COST ANALYSIS, SENSITIVITY  
ANALYSIS (U)

THE RESEARCH REPORTED IN THIS PAPER DEVELOPS A  
METHODOLOGY FOR DETERMINING THE COST IMPACT OF THE  
OPERATION AND MAINTENANCE, ARMY (OMA)  
APPROPRIATION FOR THE ANALYSIS OF PROPOSED FORCE  
CHANGES. THE METHODOLOGY IS BUILT AROUND THE  
ARMY'S FINANCIAL ACCOUNTING SYSTEM AND RELIES  
PRIMARILY ON ARMY BUDGET DATA. EACH ACCOUNT IS  
CLASSIFIED AT A LEVEL OF ACTIVITY DETAIL THAT CAN BE  
MATCHED WITH QUANTITIES, EITHER PHYSICAL OR MEASURED  
IN DOLLARS, AND FOR WHICH THERE ARE DESCRIPTIONS OF  
WHAT SPECIFIC OMA COSTS THE ACCOUNT INCLUDES.  
CLASSIFICATION OF OMA ACTIVITIES AS TO TYPE OF  
FORCE DEPENDENCY ENABLES THE COMPUTATION OF  
COEFFICIENTS THAT RELATE SPECIFIC ACTIVITY COSTS TO  
PHYSICAL MEASURES. A COMPLETE SET OF OMA COST-  
ESTIMATING RELATIONS (CERS) EXCEPT FOR COSTS OF  
TRAINING MILITARY OCCUPATIONAL SPECIALTIES  
ILLUSTRATES HOW CERS CAN BE DEVELOPED FROM THE  
ARMY'S FINANCIAL ACCOUNTING SYSTEM. (U)  
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-064 702 1378 1272  
BALLISTIC RESEARCH LABS ARDEN PROVING GROUND MD  
DOUBLE SAMPLING FOR DESTRUCTIVE TESTING, (U)  
DEC 67 41P JONAS, GEORGE H. ;  
REPT. NO. BRL-1362  
PROJ: RDT/E-1T014501A33E

UNCLASSIFIED REPORT

DESCRIPTORS: (\*QUALITY CONTROL, \*SAMPLING),  
COSTS, APPROXIMATION MATHEMATICS), TEST  
METHODS, PROBABILITY, ACCEPTABILITY, MANAGEMENT  
PLANNING, PRODUCTION CONTROL, NUMERICAL ANALYSIS,  
TABLES (U)  
IDENTIFIERS: DESTRUCTIVE TESTING, DOUBLE  
SAMPLING, DODGE-ROMIG SAMPLING TABLES (U)

EQUATIONS BY DODGE-ROMIG FOR DOUBLE SAMPLING  
FOR NON-DESTRUCTIVE TESTING HAVE BEEN MODIFIED TO BE  
USABLE FOR DESTRUCTIVE TESTING. CUMBERSOME  
EXPRESSIONS HAVE BEEN REPLACED BY SUITABLE  
APPROXIMATIONS SO CERTAIN MANIPULATIONS CAN BE MADE  
TO FACILITATE THE CONSTRUCTION OF TABLES. THE  
CONSUMER'S RISK IS SET EQUAL TO 0.10 AND IS  
EVENLY SUBDIVIDED BETWEEN THE TWO SAMPLES AS IN THE  
DODGE-ROMIG TABLES. THE TABLES ARE COMPRISED  
OF SAMPLE SIZES, ACCEPTANCE NUMBERS AND LOT SIZES FOR  
VARIOUS COMBINATIONS OF VALUES OF  $\bar{X}$ ,  $\bar{P}$ , THE PROCESS  
AVERAGE,  $P$  SUB T, THE LOT TOLERANCE FRACTION  
DEFECTIVE, AND THE COST RATIOS. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 825 14/1 15/5  
RAND CORP SANTA MONICA CALIF  
AN INTRODUCTION TO EQUIPMENT COST ESTIMATING, (U)  
JAN. 68 149P LARGE, J. P. I  
REPT. NO. RM-5470-SA  
CONTRACT: DAHC15-67-C-0150

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ARMED FORCES SUPPLIES, COSTS),  
(\*COSTS, MATHEMATICAL PREDICTION), DEPARTMENT  
OF DEFENSE, GUIDED MISSILES, AIRCRAFT,  
SPACECRAFT, WEAPON SYSTEMS, COST EFFECTIVENESS,  
STATISTICAL ANALYSIS, UNCERTAINTY, PROBABILITY (U)  
IDENTIFIERS: COST ESTIMATING (U)

THE STUDY DISCUSSES THE FUNDAMENTAL PROBLEMS OF  
ESTIMATING MAJOR EQUIPMENT COSTS AND SUGGESTS THAT  
FOR MANY PURPOSES, PARTICULARLY FOR GOVERNMENT COST  
ANALYSTS, A STATISTICAL APPROACH IS THE MOST  
SUITABLE. THE KIND OF DATA REQUIRED AND THE  
ADJUSTMENTS NEEDED TO MAKE THE DATA USEFUL ARE  
DISCUSSED IN SOME DETAIL. THE USE OF REGRESSION  
ANALYSIS IN DERIVING COST ESTIMATING RELATIONSHIPS IS  
DESCRIBED, BUT IT IS EMPHASIZED THAT UNQUESTIONING  
USE OF ESTIMATING RELATIONSHIPS OBTAINED IN THIS  
MANNER CAN RESULT IN SERIOUS ERRORS. THE CONCEPTS  
UNDERLYING THE COST-QUANTITY RELATIONSHIP GENERALLY  
KNOWN AS THE LEARNING CURVE ARE PRESENTED ALONG WITH  
INSTRUCTIONS FOR ITS USE. FINALLY, THE PROBLEM OF  
UNCERTAINTY IN COST ESTIMATING IS DISCUSSED, AND A  
FEW SUGGESTIONS FOR DEALING WITH THE PROBLEM ARE  
INCLUDED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-365 029 12/2 13/8  
NAVAL MISSILE CENTER POINT MUGU CALIF  
A DECISION THEORY APPROACH TO ACCEPTANCE  
TESTING, (U)  
JAN 68 36P SIMMONS, E. D. WISLER, C.  
L. I.  
REPT. NO. NMC-TM-67-77  
PROJ: L-2492

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DECISION THEORY, SAMPLING),  
QUALITY CONTROL, COMPUTER PROGRAMS, STATISTICAL  
DISTRIBUTIONS, ANALYSIS OF VARIANCE, NUMERICAL  
ANALYSIS, COSTS, UNCERTAINTY, OPTIMIZATION,  
ACCEPTABILITY, REVIEWS (U)  
IDENTIFIERS: BAYESIAN STATISTICS, ACCEPTANCE  
TESTING (U)

THE REPORT DISCUSSES THE APPLICATION OF STATISTICAL  
DECISION THEORY TO THE PROBLEM OF ACCEPTANCE TESTING  
BY ATTRIBUTES. THE CLASSICAL APPROACH TO  
ACCEPTANCE TESTING IS INTRODUCED AND DISCUSSED SO  
THAT IT MAY BE CONTRASTED WITH THE DECISION THEORY  
APPROACH. THE DECISION THEORY APPROACH, WHICH  
ATTEMPTS TO FIND AN OPTIMAL TRADE-OFF BETWEEN THE  
EXPECTED COSTS OF WRONG DECISIONS AND SAMPLING COSTS,  
IS ILLUSTRATED BY AN EXAMPLE USING THE BAYESIAN  
STATISTICAL VIEWPOINT. IN THE EXAMPLE, SAMPLE SIZE  
IS ASSUMED TO BE PREDETERMINED AND THE PROBLEM IS TO  
SELECT THE OPTIMAL ACTION BASED UPON PRIOR KNOWLEDGE  
AND THE RESULTS OF THE SAMPLE INSPECTION. THE  
PROBLEM IS THEN BROADENED TO INCLUDE THE TRADE-OFF  
BETWEEN THE COSTS OF WRONG DECISIONS AND THE COSTS OF  
SAMPLING INSPECTION. A NUMERICAL EXAMPLE IS SOLVED  
VIA A SIMPLE COMPUTER PROGRAM TO ILLUSTRATE THE  
RESULTS OF THE ANALYSIS. A SURVEY OF THE  
LITERATURE DEALING WITH THE APPLICATION OF DECISION  
THEORY TO ACCEPTANCE TESTING IS PRESENTED, THE  
CONTENTS OF THE REPORT DISCUSSED, AND SUGGESTIONS FOR  
FURTHER WORK MADE. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 030 15/5 12/2 5/1  
STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH  
OPTIMAL INVENTORY POLICY WITH MULTIPLE SET-UP  
COSTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 68 109P LIPPMAN, STEVEN A. :  
REPT. NO. TR-14  
CONTRACT: NONR-225(77), NSF-GK-1420  
PROJ: NR-347-010

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INVENTORY CONTROL,  
OPTIMIZATION), STOCHASTIC PROCESSES,  
MATHEMATICAL MODELS, MANAGEMENT PLANNING,  
DECISION MAKING, STOCK LEVEL CONTROL, PERIODIC  
VARIATIONS, ECONOMICS, COSTS, ALGORITHMS,  
SCHEDULING, NAVAL PROCUREMENT, THEOREMS (U)  
IDENTIFIERS: SET-UP COSTS (U)

THE REPORT DESCRIBES A DETERMINISTIC, SINGLE  
PRODUCT, DISCRETE REVIEW, FINITE TIME HORIZON  
INVENTORY PROBLEM, CALLED THE MULTIPLE SET-UP COST  
PROBLEM. THE HOLDING COST IN EACH PERIOD IS A  
NONDECREASING (AND SOMETIMES CONCAVE) FUNCTION.  
IT IS ASSUMED THAT THE ORDER IN PERIOD I IS  
DELIVERED IN TRUCKS WITH CAPACITY  $M_{SUB I}$  AND THAT  
THE COST OF DELIVERY FOR EACH TRUCK IS A  
NONDECREASING CONCAVE FUNCTION OF THE AMOUNT  
DELIVERED BY THAT TRUCK. THE EXISTENCE OF AN  
OPTIMAL PRODUCTION SCHEDULE IS ESTABLISHED SUCH THAT  
FOR EACH PERIOD (1) THERE ARE NO PARTIALLY FILLED  
TRUCKS IN PERIOD I IF THE INVENTORY ENTERING PERIOD I  
IS POSITIVE AND (2) THE INVENTORY AT THE END OF  
PERIOD I IS LESS THAN  $M_{SUB I}$ . EXPLOITING THIS  
INFORMATION, AN EFFICIENT ALGORITHM IS DEVELOPED.  
NEXT, THE STATIONARY, INFINITE HORIZON VERSION OF  
THE MULTIPLE SET-UP COST PROBLEM IS CONSIDERED.  
FINALLY, A STOCHASTIC INVENTORY PROBLEM WHEREIN THE  
ORDERING COST FUNCTION IS MERELY ASSUMED TO BE  
NONDECREASING AND SUBADDITIVE IS DISCUSSED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 158 1/3 21/5 14/4  
SYSTEMS ENGINEERING GROUP WRIGHT-PATTERSON AFB OHIO  
DEVELOPMENT AND TEST OF THE ENGINE ANALYZER  
SYSTEM.

(U)

DESCRIPTIVE NOTE: REPT. FOR 15 APR 66-30 APR 67,  
AUG 67 171P ZERKLE, HOLLIS G. I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJ. 'EASY.'

DESCRIPTORS: (\*JET FIGHTERS, TURBOJET ENGINES),  
(-TURBOJET ENGINES, \*CHECKOUT EQUIPMENT),  
AUTOMATIC, MALFUNCTIONS, MAINTENANCE, JET  
BOMBERS, AIRBORNE, GROUND SUPPORT EQUIPMENT,  
TEST EQUIPMENT, PERFORMANCE(ENGINEERING),  
DATA PROCESSING SYSTEMS, COST EFFECTIVENESS (U)

IDENTIFIERS: ENGINE ANALYZERS, EASY PROJECT, F-  
4 AIRCRAFT, F-105 AIRCRAFT, J-75 ENGINES, J-79  
ENGINES (U)

THE REPORT ON PROJECT EASY DESCRIBES THE  
RESULTS OF THE DEVELOPMENT AND 12-MONTH SERVICE TEST  
OF AN ENGINE ANALYZER SYSTEM COMBINING AIRBORNE AND  
GROUND EQUIPMENT TO AUTOMATICALLY COLLECT AND PROCESS  
ENGINE PERFORMANCE AND STRESS DATA TO VERIFY THAT AN  
ENGINE WILL ACCOMPLISH THE NEXT MISSION WITH HIGH  
CONFIDENCE, DIAGNOSE A FAULTY ENGINE, AND PREDICT  
MAINTENANCE REQUIREMENTS. A DETAILED DESCRIPTION  
OF THE EASY EQUIPMENT, ITS AIRCRAFT INSTALLATION,  
AND MAINTENANCE EXPERIENCE IS INCLUDED. EASY TEST  
EXPERIENCE AND RESULTS WITH TABLES, FIGURES, DATA  
PLOTS AND NARRATIONS RELATING TO COMPUTER PROGRAMS,  
DATA PRINTOUTS, ANALYSIS, AND DIAGNOSTIC PROCEDURES  
OF TYPICAL ENGINE MALFUNCTIONS ARE PRESENTED.  
ECONOMIC JUSTIFICATION BASED UPON THE RESULTS OF AN  
EXTENSIVE COST EFFECTIVENESS ANALYSIS IN  
ACCORDANCE WITH DOD INSTRUCTIONS 7041.3.  
'ECONOMIC ANALYSIS OF PROPOSED DEPARTMENT OF  
DEFENSE INVESTMENTS,' DATED 19 DECEMBER 1966,  
IS ALSO INCLUDED. FLEET IMPLEMENTATION  
CONSIDERATIONS, PERTAINING TO EASY EQUIPMENT  
IMPROVEMENTS, INSTALLATION RECOMMENDATIONS, PERSONNEL  
TRAINING, AND DATA PROCESSING AND DOCUMENTATION, ARE  
DISCUSSED. ALTHOUGH THE EASY EQUIPMENT USED IN  
SERVICE TEST WAS CONFIGURED FOR THE F-4C/J79-  
GE-15 AND F-105F/J75-P-19W AIRCRAFT-  
ENGINE COMBINATIONS, MODIFICATION TO ACCOMMODATE  
OTHER ENGINE TYPES AND SUBSYSTEMS AS WELL AS OTHER  
PARAMETERS NOT PRESENTLY INCLUDED CAN READILY BE  
MADE. THE SYSTEM EQUIPMENT IS GENERAL PURPOSE BUT  
THE INSTALLATION AND DATA PROGRAMMING MUST BE (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 314 13/10 5/1  
TRAVELERS RESEARCH CENTER INC HARTFORD CONN  
STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY  
SYSTEMS: SUMMARY.  
DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 68 77P AUBERT, E. J. ; CLEM, LEROY  
H. ; JENKINS, CARL F. ; NORTHROP, GAYLORD M. ;  
REPT. NO. TRC-7485-286  
CONTRACT: TCG-16790A

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-664 617, AD-664 618,  
AD-664 619, AD-664 620, AND AD-664 621.

DESCRIPTORS: (\*MARINE METEOROLOGY, \*BUOYS),  
NETWORKS, SYSTEMS ENGINEERING, FEASIBILITY  
STUDIES, PREDICTIONS, DESIGN, EFFECTIVENESS,  
RELIABILITY, SPECIFICATIONS, NAVIGATIONAL AIDS,  
DATA STORAGE SYSTEMS, DATA TRANSMISSION SYSTEMS,  
COST EFFECTIVENESS

(U)

THE PURPOSE OF THE STUDY WAS TO DETERMINE THE  
NATIONAL REQUIREMENTS OVER THE NEXT FIFTEEN YEARS FOR  
MARINE METEOROLOGICAL AND OCEANOGRAPHIC DATA THAT  
CAN, ON A COST-EFFECTIVE BASIS, BEST BE ACQUIRED BY  
BUOY SYSTEMS, AND TO DEVELOP PLANS FOR MEETING THESE  
DATA REQUIREMENTS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 390 13/1  
ARMY NATICK LABS MASS GENERAL EQUIPMENT AND PACKAGING  
LAB  
DEVELOPMENT OF THE HEATER IMMERSION, M-67, LIQUID-  
FUEL-FIRED, FOR CORRUGATED CANS. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
NOV 67 25P MCKEOWN, CORNELIUS J. ;  
PROJ: AE-7054257  
MONITOR: USA-NLABS TR-68-25-6P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEATERS, WATER); (\*ARMY  
OPERATIONS, HEATERS); DESIGN, SPECIFICATIONS,  
COSTS, GASOLINE, FOOD DISPENSING,  
VAPORIZATION, PORTABLE,  
PERFORMANCE(ENGINEERING) (U)  
IDENTIFIERS: CORRUGATED CANS, M-67 HEATERS (U)

THIS REPORT DESCRIBES THE DEVELOPMENT OF AN  
IMPROVED HEATER, IMMERSION, LIQUID-FUEL-  
FIRED, FOR CORRUGATED CANS, DESIGNATED AS M-  
67. THE NEW HEATER IS EXPECTED TO RESULT IN A  
15% REDUCTION IN MANUFACTURING COST; 50%  
REDUCTION IN ERECTION TIME; REDUCTION IN THE NUMBER  
OF PARTS REQUIRED TO FORM A HEATER; AND A HEATER MORE  
ACCEPTABLE FOR FIELD USE. THE SPECIFICATION FOR  
THE IMMERSION HEATER HAS BEEN REVISED TO THE DESIGN  
OF THE M-67. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-565 464 1/3 5/3  
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERING  
INVESTIGATION OF LEARNING CURVE AND COST ESTIMATION  
METHODS FOR CARGO AIRCRAFT. (U)  
DESCRIPTIVE NOTE: MASTERS THESIS,  
DEC 67 179P BROCKMAN, WILLIAM F. ;  
DICKENS, FREDDIE D. ;  
REPT. NO. GSM/SM-67-2/7

UNCLASSIFIED REPORT

DESCRIPTORS: (\*JET TRANSPORT PLANES, \*COSTS);  
MATHEMATICAL PREDICTION, LEARNING CURVES,  
MANPOWER STUDIES, LABOR, AIRCRAFT INDUSTRY,  
ACCURACY, REGRESSION ANALYSIS (U)  
IDENTIFIERS: \*COST ESTIMATING, C-5A AIRCRAFT,  
C-5 AIRCRAFT, C-141A AIRCRAFT, C-141  
AIRCRAFT (U)

LEARNING CURVES ARE DEVELOPED FOR NINE CARGO  
AIRCRAFT USING LOG-LINEAR, LOG-QUADRATIC, AND LOG-  
CUBIC FORMS WITH BEST RESULTS BEING OBTAINED WITH THE  
LOG-QUADRATIC. ESTIMATING RELATIONS FOR THE  
PREDICTION OF NEW AIRCRAFT COSTS ARE DERIVED USING  
CURRENT METHODS AND TESTED FOR ACCURACY ON THE  
ORIGINAL SAMPLE AND ON THE C-141A; A COST  
PREDICTION FOR THE C-5A IS ALSO OBTAINED.  
PREDICTIONS WERE ALSO OBTAINED USING A RECENT RAND  
CORPORATION DEVELOPED EQUATION. PREDICTIVE  
ACCURACY IN ALL CASES WAS POOR AND THE CONCLUSION WAS  
REACHED THAT PRESENT METHODS ARE INADEQUATE FOR THE  
ESTIMATION OF DIRECT-LABOR COSTS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 499 15/3 15/6 14/1

URS CORP BURLINGAME CALIF  
CONCEPTUAL DEVELOPMENT OF AN ANALYTICAL SYSTEM FOR  
EVALUATING ALTERNATIVE CIVIL DEFENSE  
COUNTERMEASURES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUN 67 64P HAWKINS, MYRON B. ;

REPT. NO. URS-667-4

CONTRACT: OCD-OS-64-201

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CIVIL DEFENSE SYSTEMS,  
COUNTERMEASURES); COST EFFECTIVENESS, NUCLEAR  
WARFARE CASUALTIES, NUCLEAR EXPLOSION DAMAGE,  
URBAN AREAS, PREDICTIONS, KILL PROBABILITIES,  
POPULATION, COMPUTER PROGRAMS, THERMAL  
RADIATION, SURVIVAL, AIRBURST, RADIATION  
HAZARDS, RADIOACTIVE FALLOUT, FIRES, DISEASES,  
STARVATION, RADIATION INJURIES

(U)

THE CONCEPT OF A SYSTEM FOR EVALUATING THE COST-EFFECTIVENESS OF CIVIL DEFENSE COUNTERMEASURES IS FORMULATED. EFFECTIVENESS WILL BE DETERMINED BY COMPARING THE NUMBER OF CASUALTIES RESULTING FROM A BASE-LINE 'NO-COUNTER-MEASURE' PREDICTION TO THOSE OCCURRING WHEN THE USE OF VARIOUS COUNTERMEASURES IS ASSUMED. THE COST OF THE COUNTERMEASURE WILL BE DERIVED IN A SEPARATE COMPUTATION. THE PREDICTION OF CASUALTIES RESULTING FROM THE USE OF A COUNTERMEASURE IN A SINGLE URBAN AREA WOULD BE DERIVED BY SUMMING THE CASUALTIES PREDICTED FOR A LARGE NUMBER OF SUBAREAS OR CELLS, EACH PERHAPS 1 KILOMETER SQUARE. PHYSICAL DESCRIPTIONS OF EACH CELL MUST INCLUDE THOSE CHARACTERISTICS OF THE AREA THAT AFFECT THE NUMBER OF CASUALTIES AND THAT ARE MODIFIED BY ANY COUNTERMEASURE SUBJECT TO TEST. THE PREDICTION PROGRAM SUCCESSIVELY SUBJECTS EACH POPULATION GROUP TO THE ENVIRONMENTS OR HAZARDS IN THE SAME ORDER THEY WILL OCCUR, AND TABULATES AFTER EACH HAZARD THE NUMBER OF KILLED, INJURED, AND UNHURT. THE CENSUS OF SURVIVORS AFTER EACH HAZARD BECOMES THE INPUT POPULATION FOR THE NEXT RISK. THE PROGRAM USES THREE MAJOR PHASES OR TIME PERIOD: THE IMMEDIATE-EFFECTS PERIOD (THERMAL RADIATION AND AIR BLAST HAZARDS); THE EARLY-EFFECTS PERIOD (FIRE AND FALLOUT RADIATION HAZARDS); AND THE POST-EMERGENCY PERIOD (DISEASE, STARVATION RECOVERY FROM INJURIES AND OTHER EFFECTS).

(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 016 11/6 5/1 14/1  
RAND CORP SANTA MONICA CALIF  
A STATISTICAL-ENGINEERING APPROACH TO ESTIMATING  
RAILWAY COST FUNCTIONS. (U)  
MAR 68 17P DESALVO, JOSEPH S. ;  
LAVE, LESTER B. ;  
REPT. NO. P-3781

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
CARNEGIE-MELLON UNIV., PITTSBURGH, PA.

DESCRIPTORS: (\*RAILROADS, COSTS),  
TRANSPORTATION, RAILROAD CARS, WAGES, FUEL  
OIL, LIFE EXPECTANCY, OPERATIONS RESEARCH,  
STATISTICAL ANALYSIS, MANAGEMENT ENGINEERING,  
ECONOMICS (U)

STATISTICAL AND ENGINEERING METHODS BOTH POSSESS  
ADVANTAGES AND DISADVANTAGES IN THE DETERMINATION OF  
COST BEHAVIOR. THIS PAPER ILLUSTRATES A WEDDING OF  
THE TWO APPROACHES FOR THE CASE OF RAIL COSTS. THE  
STATISTICAL APPROACH OF MEYER, PECK, STENASON,  
AND ZWICK IS USED FOR ALL COST COMPONENTS EXCEPT  
LINEHAUL AND EQUIPMENT DEPRECIATION. AN  
ENGINEERING PROCESS FUNCTION IS USED ALONG WITH INPUT  
COSTS TO DEVELOP LINEHAUL COSTS. DEPRECIATION  
COSTS FOR CARS AND LOCOMOTIVES ARE ESTIMATED FROM  
EQUIPMENT PRICES AND ESTIMATED LIFETIMES. THE  
RESULTING STATISTICAL-ENGINEERING COST FUNCTION  
PERMITS A DETAILED ESTIMATION OF THE COST OF A TRAIN  
TRIP. IT IS MUCH MORE FLEXIBLE THAN THE PURE  
STATISTICAL APPROACH AS IT PERMITS CHANGES IN  
EQUIPMENT, ROADWAY, AND LOADING CONDITIONS. IN  
ADDITION, IT INCLUDES COSTS NOT AMENABLE TO  
ENGINEERING ANALYSIS, SUCH AS SELLING AND  
ADMINISTRATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 443 9/2 5/5  
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS  
HUMAN FACTORS AND THE DESIGN OF TIME SHARING COMPUTER  
SYSTEMS. (U)  
NOV 67 25P NICKERSON, R. S. ; ELKIND, J.  
I. ; CARBONELL, J. R. ;  
REPT. NO. SCIENTIFIC-2  
CONTRACT: F19628-68-C-0125  
PROJ: AF-8668  
TASK: 866800  
MONITOR: AFCRL 68-0054

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SCIENTIFIC REPT. NO. 3,  
AD-666 065.

DESCRIPTORS: (\*TIME SHARING, HUMAN  
ENGINEERING), DIGITAL COMPUTERS, MAN-MACHINE  
SYSTEMS, PROGRAMMING LANGUAGES, ALGORITHMS,  
OPTIMIZATION, COSTS (U)  
IDENTIFIERS: TRADEOFFS (U)

THE ADVENT OF COMPUTER TIME SHARING POSES AN  
EXTRAORDINARY CHALLENGE TO HUMAN FACTORS RESEARCH  
DURING THE NEXT DECADE. BEFORE TIME SHARING, TWO  
FACTS COMBINED TO DE-EMPHASIZE THE IMPORTANCE OF  
HUMAN FACTORS CONSIDERATIONS IN THE DESIGN OF  
COMPUTER SYSTEMS: (1) THE COST OF THE  
COMPUTER'S TIME WAS EXORBITANTLY HIGH RELATIVE TO THE  
COST OF USERS' TIME, AND (2) THE USERS  
CONSTITUTED A SELECT, HIGHLY SKILLED AND HIGHLY  
MOTIVATED GROUP OF SPECIALISTS. TWO OF THE  
PROMISES OF TIME SHARING, HOWEVER, ARE (1) A  
DRASTIC REDUCTION IN THE COST OF COMPUTER TIME TO THE  
INDIVIDUAL USER, AND (2) THE LARGE SCALE  
AVAILABILITY OF COMPUTER FACILITIES TO INDIVIDUALS  
UNTRAINED IN ANY AREAS OF COMPUTER TECHNOLOGY.  
HUMAN FACTORS CONSIDERATIONS THEN BECOME IMPORTANT  
BOTH FOR ECONOMIC AND PSYCHOLOGICAL REASONS. THIS  
PAPER BRIEFLY NOTES WHAT A FEW OF THESE  
CONSIDERATIONS ARE. (AUTHOR) (U)

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JDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 506 1/3 14/1 15/5  
MARINE CORPS WASHINGTON D C  
A LINEAR PROGRAMMING MODEL FOR MINIMUM-COST  
PROCUREMENT AND OPERATION OF MARINE CORPS TRAINING  
AIRCRAFT, (U)  
68 18P BURNHAM, PHILIP R. ;

UNCLASSIFIED REPORT  
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH  
LOGISTICS QUARTERLY, V15 N1 P81-97 MAR 1968.

DESCRIPTORS: (\*JET TRAINING PLANES, COST  
EFFECTIVENESS), NAVAL AIRCRAFT, MARINE CORPS,  
NAVAL TRAINING, NAVAL PROCUREMENT, LINEAR  
PROGRAMMING, JET FIGHTERS, JET BOMBERS, ATTACK  
BOMBERS, MATHEMATICAL MODELS, RECONNAISSANCE  
PLANES (U)  
IDENTIFIERS: TRADEOFFS, F-4 AIRCRAFT, RF-4  
AIRCRAFT, A-6 AIRCRAFT, EA-6 AIRCRAFT (U)

IN MILITARY SITUATIONS OF SHARPLY INCREASING COMBAT  
ACTIVITY THE MARINE CORPS IS FACED WITH TRAINING  
PROBLEMS IN ITS EXPANDING AVIATOR CORPS.  
ADDITIONAL TRAINING AIRCRAFT ARE REQUIRED, AND  
PROCUREMENT DECISIONS MUST BE MADE. IN VIEW OF THE  
SIGNIFICANT COSTS INVOLVED IN PROCUREMENT AND  
OPERATION OF NEW HIGH PERFORMANCE AIRCRAFT, IT IS  
VERY DESIRABLE TO BUY AND OPERATE AN EFFICIENT MIX OF  
AIRCRAFT NECESSARY FOR TRAINING THE PILOTS TO MAKE  
THE MARINE AIRCRAFT WINGS ESSENTIALLY 100-  
PERCENT TACTICALLY QUALIFIED. THE MATHEMATICAL  
MODEL PRESENTED ENABLES COMPUTATION OF A LEAST-COST  
MIX OF TRAINING AIRCRAFT WHICH SATISFIES CERTAIN  
SPECIFIED TRAINING REQUIREMENTS. THE BASIC ELEMENT  
ALLOWING TRADEOFFS IS THE COMMONALITY OF TRAINING  
AVAILABLE IN THE F4, RF4, A6, AND EA6 TYPES  
OF AIRCRAFT. BOTH AIRFRAME ORIENTED AND MISSION  
ORIENTED TRAINING ARE NECESSARY, BUT THE AIRFRAME  
ORIENTED TRAINING CAN BE CONDUCTED IN EITHER OF THE  
AIRCRAFT POSSESSING THE COMMONALITY. TRAINING  
REQUIREMENTS OVER A FIVE YEAR PERIOD ARE CONSIDERED,  
AND THE MIX OF TRAINING AIRCRAFT HAS THE MINIMUM FIVE  
YEAR PROCUREMENT AND OPERATING COST. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 574 15/5 12/2  
DECISION STUDIES GROUP PALO ALTO CALIF  
TWO PAPERS ON ADAPTIVE INVENTORY CONTROL. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 68 25P GLIER, ROBERT ;  
CONTRACT: NONR-4457(00)  
PROJ: NR-347-001

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INVENTORY CONTROL, ADAPTIVE  
SYSTEMS), (\*DYNAMIC PROGRAMMING, INVENTORY  
CONTROL), OPTIMIZATION, COSTS, RANDOM  
VARIABLES, SAMPLING, MATHEMATICAL PREDICTION,  
STOCK LEVEL CONTROL, STOCHASTIC PROCESSES,  
DECISION THEORY (U)  
IDENTIFIERS: BAYESIAN ANALYSIS (U)

TWO PAPERS ON ADAPTIVE INVENTORY CONTROL ARE  
PRESENTED. THE FIRST USES PROCESS CONTROL  
TECHNIQUES TO OBTAIN AN OPTIMAL POLICY FOR AN  
INVENTORY PROBLEM IN WHICH ORDERS ARE PLACED AT THE  
START OF EACH OF AN INFINITE NUMBER OF INTERVALS.  
THE COST OF ORDERING IS C AND IS BALANCED AGAINST  
A COST PROPORTIONAL TO THE SQUARE OF THE ON-HAND  
INVENTORY (OR SHORTAGE). DELIVERY LEAD TIME  
IS T UNITS. THE SECOND PAPER CONSIDERS A SIMILAR  
MULTIPERIOD PROBLEM IN WHICH THERE IS A HOLDING COST  
AND SHORTAGE COST. THE INVENTORY PROCEDURE IS  
ADAPTIVE IN THAT BAYESIAN PROCEDURES ARE USED WITH  
THE ACCUMULATED DEMAND DATA TO ESTIMATE THE UNKNOWN  
PARAMETERS OF THE DEMAND DISTRIBUTION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 656 5/1 5/3 14/1 12/2  
RAND CORP SANTA MONICA CALIF  
COST FUNCTIONS AND BUDGETS (COST CONSIDERATIONS IN  
SYSTEMS ANALYSIS), (U)  
FEB 68 42P FISHER, G. H. I  
REPT. NO. P-3789

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION TO A  
CONFERENCE ON THE ECONOMIC ANALYSIS OF PUBLIC  
PRODUCTS AT PRINCETON UNIVERSITY IN APRIL 1968,  
SPONSORED BY THE UNIVERSITIES-NATIONAL BUREAU OF  
ECONOMIC RESEARCH COMMITTEE ON PRODUCTION AND  
DISTRIBUTION OF PUBLIC PRODUCTS.

DESCRIPTORS: (\*MANAGEMENT PLANNING, \*COST  
EFFECTIVENESS), SYMPOSIA, AIRCRAFT INDUSTRY,  
ECONOMICS, DECISION MAKING, BUDGETS, SYSTEMS  
ENGINEERING, SAMPLING, DEPARTMENT OF DEFENSE,  
DATA PROCESSING SYSTEMS, OPERATIONS RESEARCH (U)  
IDENTIFIERS: SYSTEMS ANALYSIS (U)

SYSTEMS ANALYSIS FORMS THE CENTRAL CORE OF A  
PROGRAM BUDGETING ACTIVITY. A VITALLY IMPORTANT  
PART OF SYSTEMS ANALYSIS IS A COST ANALYSIS  
CAPABILITY TO GENERATE ESTIMATES OF THE RESOURCE  
IMPACT OF ALTERNATIVE COURSES OF ACTION BEING  
CONSIDERED FOR THE DISTANT FUTURE. SOME OF THE  
PRINCIPAL CHARACTERISTICS OF A SYSTEMS COST ANALYSIS  
CAPABILITY ARE GIVEN. ESTABLISHING AND MAINTAINING  
A COST ANALYSIS CAPABILITY TO SUPPORT SYSTEMS  
ANALYSIS STUDIES INVOLVES NUMEROUS DIFFICULTIES.  
ONE OF THE MOST TROUBLESOME IS THE DATA BASE  
PROBLEM. SOLUTION TO PARTS OF THE DATA PROBLEM MAY  
BE THROUGH MAJOR OVERHAUL OF PRESENT FORMAL  
INFORMATION SYSTEMS AND THROUGH THE ESTABLISHMENT OF  
NEW COMPLETE ENUMERATION SYSTEMS. THIS, HOWEVER,  
DOES NOT APPEAR FEASIBLE AS A GENERAL SOLUTION--AT  
LEAST IN THE FORESEEABLE FUTURE. SHORT OF SUCH  
MAJOR EFFORTS ARE NUMEROUS ALTERNATIVE POSSIBILITIES.  
SOME EXAMPLES ARE GIVEN. (U)

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DCC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 732 15/5 12/2  
OFFICE OF NAVAL RESEARCH WASHINGTON D C  
NAVAL RESEARCH LOGISTICS QUARTERLY. VOLUME 15, NO.  
1, MARCH 1968. (U)  
68 127P

UNCLASSIFIED REPORT

AVAILABILITY: HARD COPY AVAILABLE FROM  
SUPERINTENDENT OF DOCUMENTS, GPO, WASHINGTON, D.  
C. 20402 \$0.50 AS D210.12-VOL. 15/NO. 1.  
SUPPLEMENTARY NOTE: SEE ALSO VOLUME 14 NO. 1, AD-651  
848.

DESCRIPTORS: (\*NAVAL RESEARCH, LOGISTICS),  
(\*OPERATIONS RESEARCH, LOGISTICS), REPORTS,  
LINEAR PROGRAMMING, DYNAMIC PROGRAMMING,  
DEPARTMENT OF DEFENSE, DECISION THEORY,  
GOVERNMENT PROCUREMENT, MILITARY TRAINING,  
OPTIMIZATION, SCHEDULING, FUNCTIONS,  
ECONOMICS, HANDLING, COSTS, THEOREMS (U)  
IDENTIFIERS: INTEGER PROGRAMMING, QUADRATIC  
ASSIGNMENT PROBLEM, MILITARY THEORY (U)

CONTENTS: ON NONLINEAR OPTIMIZATION IN  
INTEGERS; THE SEQUENCING OF 'RELATED' JOBS; ON  
THE MINIMIZATION OF A CERTAIN CONVEX FUNCTION ARISING  
IN APPLIED DECISION THEORY; SUBOPTIMAL ALGORITHMS  
FOR THE QUADRATIC ASSIGNMENT PROBLEM; ECONOMIC  
IMPACT AND THE NOTION OF COMPENSATED PROCUREMENT; A  
LINEAR PROGRAMMING MODEL FOR MINIMUM-COST PROCUREMENT  
AND OPERATION OF MARINE CORPS TRAINING AIRCRAFT;  
AIRCRAFT LOADING CONSIDERATIONS; A SORTIE  
GENERATOR FOR USE IN PLANNING MILITARY TRANSPORT  
OPERATIONS; SOME NOTES ON MILITARY THEORY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 756 15/5 6/17  
ARMY NATICK LABS MASS CLOTHING AND ORGANIC MATERIALS  
LAB  
DIRECT MOLDED SOLE BOOTS. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
SEP 67 24P PARK, ALICE F. ;  
SWAIN, DOUGLAS S. ;  
PROJ: DA-1M643303D54712  
MONITOR: USA-NLABS, FL TR-68-20-CM, 19

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHOES, MANUFACTURING METHODS),  
MOLDING, ARMY PERSONNEL, TROPICAL REGIONS,  
LEATHER, RUBBER, VULCANIZATION, COST  
EFFECTIVENESS, MAINTENANCE, HONEYCOMB CORES,  
PROTECTION, ARMED FORCES SUPPLIES, SHIELDING,  
SHOCK RESISTANCE, MILITARY REQUIREMENTS, METAL  
PLATES (U)  
IDENTIFIERS: \*BOOTS, \*DIRECT MOLDED SOLES (U)

THE U.S. ARMY NATICK LABORATORIES  
MODIFIED A METHOD OF FOOTWEAR CONSTRUCTION KNOWN AS  
DIRECT MOLDED SOLE (DMS) FOR THE ARMY'S  
TROPICAL AND ALL-LEATHER COMBAT BOOTS. NLABS  
DEVELOPED THE SPECIAL COMPONENT MATERIALS, BOOT  
DESIGNS AND FABRICATION TECHNIQUES REQUIRED TO  
PRODUCE MILITARY FOOTWEAR BY THE DMS PROCESS.  
THE SOLE AND HEEL OF THE NEW DMS BOOTS ARE MOLDED  
DIRECTLY TO THE BOOT UPPERS ON HIGH-PRESSURE  
VULCANIZING MACHINES, ELIMINATING THE SOLE STITCHING  
AND HEEL NAILING WHICH WERE THE MAJOR POINTS OF  
FAILURE IN WELT COMBAT FOOTWEAR. THE DMS BOOTS  
ARE SIGNIFICANTLY MORE DURABLE AND MORE COMFORTABLE  
THAN WELT CONSTRUCTION BOOTS, AND WILL SAVE THE  
MILITARY MONEY BOTH IN PRODUCTION COST AND BY  
REDUCING BOOT REPAIR AND MAINTENANCE PROBLEMS. THE  
DMS PROCESS HAS ENABLED NLABS TO INCORPORATE  
SPECIAL PROTECTIVE FEATURES INTO THE TROPICAL COMBAT  
BOOT, INCLUDING A STEEL SHIELD TO RESIST PENETRATION  
OF THE BOOT BOTTOM BY PUNJI STAKES, AND A WEDGE SHANK  
TO DEFLECT AND ABSORB THE IMPULSE OF ANTIPERSONNEL  
LAND MINES. (AUTHOR: (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00-123

AD-686 823 10/2 17/7  
GARRETT CORP TORRANCE CALIF AIRESEARCH MFG DIV  
UNINTERRUPTIBLE POWER SYSTEM MODULE ANALYSIS. (U)  
DESCRIPTIVE NOTE: INTERIM REPT.,  
NOV 67 74P PLEDGER, E. R. 1  
CONTRACT: FA-67-WA-1748  
PROJ: FAA-450-101-05E  
MONITOR: FAA-RD 67-62

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR TRAFFIC CONTROL SYSTEMS,  
\*POWER EQUIPMENT), MODULES(ELECTRONICS),  
ELECTRICAL EQUIPMENT, POWER SUPPLIES, REDUNDANT  
COMPONENTS, RELIABILITY, STABILITY, RECTIFIERS,  
INVERTERS, STORAGE BATTERIES, POWER  
TRANSFORMERS, STAND-BY GENERATORS, DIESEL ENGINES,  
COST EFFECTIVENESS (U)  
IDENTIFIERS: MEAN TIME BETWEEN FAILURES (U)

A MODULE ANALYSIS WAS CONDUCTED TO DETERMINE THE  
OPTIMUM RATING OF MODULE WHICH, TOGETHER WITH  
IDENTICAL MODULES, WOULD BEST SATISFY THE CONTRACTUAL  
REQUIREMENTS FOR AN UNINTERRUPTIBLE AC POWER (U-  
P) SUPPLY SYSTEM FOR USE IN FEDERAL AVIATION  
ADMINISTRATION (FAA) AIR ROUTE TRAFFIC  
CONTROL CENTERS. IN DETERMINING THE OPTIMUM  
MODULE OUTPUT CAPACITY, DUE CONSIDERATION WAS GIVEN  
TO INCURRING THE LOWEST INITIAL AND RECURRING COST  
OVER A 10-YEAR PERIOD. THE POSSIBILITY OF FUTURE U-P  
SUPPLY INSTALLATIONS AT 18 OTHER CENTERS IN ADDITION  
TO THE PRESENT ISLIP, N.Y., INSTALLATION UNDER  
CONTRACT WITH REGARD TO (1) THEIR INITIAL  
CRITICAL LOAD MAGNITUDES (98-381 KVA); (2)  
ULTIMATE LOADS OF 500 KVA; (3) ULTIMATE LOADS OF  
A PRESENTLY INDETERMINABLE KVA; AND (4) THE  
INTERCHANGEABILITY OF MODULES BETWEEN AIR ROUTE  
TRAFFIC CONTROL CENTERS. ALSO CONSIDERED IN  
THIS ANALYSIS WAS A QUANTITATIVE ECONOMIC AND  
OPERATIONAL DETERMINATION OF VARIOUS MODULE OUTPUT  
CAPACITIES AND MODULE CIRCUIT CONFIGURATIONS AS THEY  
RELATE TO CRITICAL LOADS OF BOTH A STEADY STATE AND  
TRANSIENT NATURE, ELECTRICAL PERFORMANCE, EFFICIENCY,  
REDUNDANCY, MAINTAINABILITY, SPACE AND FUTURE  
EXPANSION REQUIREMENTS, AND RELIABILITY REQUIREMENTS.  
SIX BASIC CIRCUIT CONFIGURATIONS WERE INVESTIGATED  
AT POWER LEVELS RANGING FROM 50 KVA MODULES TO 250  
KVA MODULES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 834 13/10  
NEW HAMPSHIRE UNIV DUFHAM ENGINEERING DESIGN AND ANALYSIS  
LAB  
UNIVERSITY SEALAB. CAPITAL AND OPERATING COST  
ANALYSIS FOR A SATURATION DIVING FACILITY FOR THE  
NATIONAL OCEANOGRAPHIC COMMUNITY. (U)  
DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 67 82P SAVAGE, GODFREY H. ;  
REPT. NO. TR-101  
CONTRACT: NONR-3710(04)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*UNDERWATER VEHICLES, DEEP  
SUBMERGENCE), OCEAN BOTTOM SAMPLING, COSTS,  
LABORATORIES, DESIGN, MOBILITY, BUDGETS,  
OPERATION, MAINTENANCE, LIFE SUPPORT, MARINE  
BIOLOGY, TABLES (U)  
IDENTIFIERS: SEDOPOD UNDERWATER VEHICLE, OSCILAB  
UNDERWATER VEHICLE, MANNED SUBMERSIBLES, SEALAB  
PROJECT (U)

A DETAILED ENGINEERING DESIGN STUDY HAS BEEN  
CONDUCTED TO DETERMINE THE TECHNICAL AND ECONOMIC  
FEASIBILITY OF CONSTRUCTING A MOBILE SATURATION  
DIVING FACILITY FOR THE NATIONAL OCEANOGRAPHIC  
COMMUNITY. THIS DOCUMENT, WHICH CONTAINS THE  
COST ANALYSIS, IS AN ADDENDUM TO THE MAIN REPORT  
ENTITLED, 'UNIVERSITY SEALAB,' PUBLISHED BY THE  
UNIVERSITY OF NEW HAMPSHIRE, EDAL TECHNICAL  
REPORT NO. 100, JANUARY 1967. THE  
UNIVERSITY SEALAB PROJECT WAS SPONSORED BY THE  
OFFICE OF AVAL RESEARCH, CONTRACT NO.  
NONR 3710-04. THE CAPITAL INVESTMENTS AND  
OPERATING COSTS FOR A UNIVERSITY SEALAB ARE  
EVALUATED AND DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 459 17/2 15/3

GAUTNEY AND JONES COMMUNICATIONS INC WASHINGTON, D C  
COMMUNICATIONS STUDY STATE OF MISSISSIPPI. (U)

DESCRIPTIVE NOTE: REPORT ON PHASE 1.

JAN 67 121P

REF. NO. TR-66.0012.001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
MISSISSIPPI RESEARCH AND DEVELOPMENT CENTER, AND  
MISSISSIPPI CIVIL DEFENSE COUNCIL. SEE ALSO  
FINAL REPORT, AD-667 461, AND REPORT ON PHASE 2, AD-  
667 460.

DESCRIPTORS: (\*COMMUNICATION SYSTEMS, \*CIVIL  
DEFENSE SYSTEMS), NATIONAL DEFENSE, COST  
EFFECTIVENESS, ADVANCED PLANNING, INVENTORY,  
TELEPHONE COMMUNICATION SYSTEMS, RADIO  
COMMUNICATION SYSTEMS, COMMUNICATION EQUIPMENT,  
LIFE EXPECTANCY, QUESTIONNAIRES, TELEPHONE  
EQUIPMENT, POLICE, EARLY WARNING SYSTEMS,  
MAINTENANCE, UNIVERSITIES, MISSISSIPPI (U)

BETWEEN NOVEMBER 17 AND DECEMBER 16, 1966,  
EXTENSIVE INVESTIGATIONS AND INTERVIEWS WERE  
CONDUCTED IN CONNECTION WITH PHASE I OF THE  
COMMUNICATIONS STUDY FOR THE STATE OF  
MISSISSIPPI. PHASE I IS AN INVENTORY OF  
COMMUNICATIONS CAPABILITY, OPERATIONAL COSTS,  
EFFECTIVENESS, AND INVESTMENT. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 461 17/2 15/3  
GAUTNEY AND JONES COMMUNICATIONS INC WASHINGTON, D C  
COMMUNICATIONS STUDY STATE OF MISSISSIPPI. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 67 165P GREEN, THOMAS L. ;  
SNEAD, JAMES M. ; HOWARD, GLENN ; BAKER, MARVIN  
C. ; JR. ; WADLOW, KENNETH S. ;  
REPT. NO. TR-66.0012.003

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
MISSISSIPPI RESEARCH AND DEVELOPMENT CENTER, AND  
MISSISSIPPI CIVIL DEFENSE COUNCIL. SEE ALSO  
REPORT ON PHASE 1, AD-667 452, AND REPORT ON PHASE  
2, AD-667 450.

DESCRIPTORS: (\*COMMUNICATION SYSTEMS, \*CIVIL  
DEFENSE SYSTEMS), COST EFFECTIVENESS, TELEPHONE  
COMMUNICATION SYSTEMS, RADIO COMMUNICATION SYSTEMS,  
DATA PROCESSING SYSTEMS, COMMUNICATION EQUIPMENT,  
MAINTENANCE, BUDGETS, EFFICIENCY, STANDARDS,  
NATIONAL DEFENSE, ADVANCED PLANNING,  
MISSISSIPPI (U)

ONE OF THE MOST SIGNIFICANT FINDINGS OF THE STUDY  
LIES IN THE AREA OF INCREASED EFFECTIVENESS AND  
REDUCED COSTS WHICH WILL RESULT FROM CENTRALIZATION  
OF COMMUNICATIONS SERVICES. NOT UNLIKE MOST OTHER  
STATES, MISSISSIPPI AGENCIES HAVE ATTEMPTED TO  
SOLVE COMMUNICATIONS PROBLEMS ON AN INDIVIDUAL AGENCY  
BASIS. AS A RESULT, EACH AGENCY WHICH HAS A  
SPECIALIZED COMMUNICATIONS SYSTEM HAS ALSO BUILT UP A  
SMALL COMMUNICATIONS STAFF TO DEAL WITH THE PROBLEMS  
INHERENT IN THE ACQUISITION, OPERATION AND  
MAINTENANCE OF THESE SYSTEMS. IN THIS DOCUMENT,  
SEVERAL CHANGES ARE RECOMMENDED IN TELEPHONE  
PRACTICES WITHIN THE STATE GOVERNMENT. ULTIMATELY,  
THE STATE SHOULD ACQUIRE AN INTEGRATED, DEDICATED  
TELEPHONE NETWORK TO HANDLE THE PROBLEMS OF  
INTRASTATE TOLL SERVICES, AND TO SERVE AS A CENTRAL  
BACKBONE NETWORK FOR OTHER COMMUNICATIONS SUCH AS  
DATA, TELEMETRY, CONTROL AND VOICE. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 522 9/2 14/1  
MITRE CORP BEDFORD MASS  
APPLICATION OF COST-EFFECTIVENESS ANALYSIS TO EDP  
SYSTEM SELECTION, (U)  
MAR 68 60P PORTER, J. D. ; RUDWICK, B.  
H. I  
REPT. NO. MTR-527  
CONTRACT: AF 19(628)-5165  
PROJ: AF-8510  
MONITOR: ESD TR-67-412

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DATA PROCESSING SYSTEMS, COST  
EFFECTIVENESS), SELECTION,  
PERFORMANCE(ENGINEERING), SOURCES, COSTS,  
TIME, COMPUTER PERSONNEL, COMPUTER STORAGE  
DEVICES, COMPUTER PROGRAMS, PROBABILITY,  
UNCERTAINTY, DECISION MAKING, DESIGN,  
MAINTENANCE, DOCUMENTATION (U)

A CONCEPTUAL APPROACH FOR EVALUATING AND SELECTING  
AMONG ALTERNATIVE ELECTRONIC DATA PROCESSING  
(EDP) SYSTEMS PROPOSED TO MEET A SET OF EDP USER  
NEEDS HAS BEEN DEVELOPED BY APPLYING COST-  
EFFECTIVENESS METHODS AND TECHNIQUES TO THE SOURCE  
SELECTION PROBLEM. THE REPORT PROVIDES A FRAMEWORK  
THAT ALLOWS THE EDP SYSTEM EVALUATOR TO COMBINE THE  
SELECTED RELEVANT SYSTEM PERFORMANCE MEASURES AND THE  
RELATED COST ELEMENTS TO ARRIVE AT A RATIONAL  
DEFENDABLE SELECTION DECISION. (AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 578 5/9  
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C  
PERSONNEL RESEARCH LAB  
TRAINING TIME AND COSTS FOR NAVY RATINGS AND  
NECS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 68 648P CLARY, JAMES N. ;  
REPT. NO. NM-68-13  
PROJ: PF0160101C01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL TRAINING, COSTS), NAVAL  
PERSONNEL, STUDENTS, INSTRUCTORS,  
CLASSIFICATION, TABLES, CLOTHING, MANAGEMENT  
PLANNING (U)

INITIALLY, THE OBJECTIVE OF THIS STUDY WAS TO  
DETERMINE THE TRAINING TIME AND COSTS FOR RATINGS AND  
NECS IN THE PROFICIENCY PAY CATEGORY; HOWEVER,  
COVERAGE WAS EXTENDED TO PROVIDE SUCH DATA FOR ALL  
RATINGS AND PRIMARY NECS. ENLISTED PERSONNEL  
COSTS INCLUDED IN THESE STUDIES ARE: (1)  
ACCESSION, ACCESSION TRAVEL, INITIAL UNIFORM ISSUE,  
AND RECRUIT TRAINING; (2) APPROPRIATE BASIC  
(CLASS A) TRAINING FOR A PARTICULAR RATING;  
(3) ADVANCED AND/OR SPECIALIZED TRAINING LEADING  
TO THE ASSIGNMENT OF A NAVY ENLISTED  
CLASSIFICATION CODE (NEC); (4) STUDENT PAY  
AND ALLOWANCES DURING SUCH TRAINING PERIODS; (5)  
VALUE OF LEAVE ACCRUED BY STUDENTS, INSTRUCTOR AND  
SUPPORT PERSONNEL DURING TRAINING; AND (6) TRAVEL  
COSTS INCURRED AS A RESULT OF TRAINING. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AJ-667 738 6/14 5/9  
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C  
PERSONNEL RESEARCH LAB  
MEDICAL COST REPORTING: AN ANALYSIS. (U)  
DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 67 45P TAYLOR, JOSEPH L. ;  
REPT. NO. WRM-68-11  
PROJ: PF0160101C01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MILITARY MEDICINE, COSTS),  
ARMED FORCES BUDGETS, NAVAL PERSONNEL, MEDICAL  
PERSONNEL, TRAINING, HOSPITALS, MEDICAL  
EQUIPMENT (U)

THE PURPOSE OF THIS REPORT IS TO IDENTIFY AND  
EVALUATE THE PROBLEM AREAS ASSOCIATED WITH THE  
DETERMINATION OF MEDICAL COSTS AS INCURRED BY THE  
DEPARTMENT OF THE NAVY FOR ITS MILITARY  
PERSONNEL. TO ESTABLISH A VALID MEDICAL COST,  
INDIVIDUAL TRAINING COST STUDIES SHOULD BE COMPLETED  
FOR HM'S, DT'S, MEDICAL CORPS, DENTAL  
CORPS, NURSE CORPS, MEDICAL SERVICE  
CORPS, AND THE CHAPLAIN CORPS. CURRENTLY TEN  
MANAGEMENT BUREAUS ARE INVOLVED WITH THE DISTRIBUTION  
OF FUNDS FOR NAVAL MEDICAL ACTIVITIES. THE  
BUREAU OF MEDICINE AND SURGERY FUNDS A PORTION  
OF THE COMPLETE MEDICAL BUDGET, AND IT IS THIS FIGURE  
WHICH IS USED IN THE COMPUTATION OF A PER MAN PER  
YEAR MEDICAL COST. A CLOSE EXAMINATION OF THE  
CURRENT MEDICAL ACCOUNTING SYSTEM SHOULD BE  
UNDERTAKEN TO DETERMINE THE ECONOMIC FEASIBILITY OF  
ESTABLISHING ONE CENTRAL MEDICAL COST REPORTING  
AGENCY. THIS WOULD PROVIDE A COMPLETE COST OF  
MEDICAL SERVICES WHICH COULD THEN BE COMBINED WITH  
THE TRAINING COSTS AND PRORATED ON A PER MAN PER YEAR  
BASIS TO ARRIVE AT A MORE VALID ANNUAL COST. UNTIL  
THIS HAS BEEN ACCOMPLISHED, IT IS RECOMMENDED THAT  
THE MEDICAL COST AS CURRENTLY REPORTED BY THE  
BUREAU OF MEDICINE AND SURGERY BE UTILIZED.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 766 11/12 13/13 2/6

FOREST PRODUCTS LAB MADISON WIS

CONSTRUCTION OF NU-FRAME RESEARCH HOUSE: UTILIZING  
NEW WOOD-FRAME SYSTEM. (U)

DESCRIPTIVE NOTE: FOREST SERVICE RESEARCH PAPER,

MAR 68 42P ANDERSON, L. O. I

REPT. NO. FSRP-FPL-88

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
WISCONSIN UNIV., MADISON.

DESCRIPTORS: (\*WOOD, CONSTRUCTION MATERIALS),  
(\*STRUCTURES, WOOD), HOUSING, COSTS,  
WALLS, STANDARDS, ROOFS,  
PANELS(STRUCTURAL), SHEETS, PLASTICS,  
STUDS, THERMAL INSULATION, PLYWOOD, ADHESIVES,  
BONDING, FORESTRY, DESIGN, FLEXURAL STRENGTH,  
MANUFACTURING METHODS (U)

A 28- BY 40-FOOT RESEARCH HOUSE WAS COMPLETED USING  
THE NU-FRAME SYSTEM OF CONSTRUCTION. THIS FIVE-  
COMPONENT WOOD-FRAME SYSTEM, IS AIMED AT REDUCED COST  
AND UTILIZATION OF LOWER GRADES OF WOOD.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-815 392 13/2

BATTELLE MEMORIAL INST COLUMBUS OHIO REMOTE AREA CONFLICT  
INFORMATION CENTER

A FEASIBILITY STUDY OF A REMOTE AREA LAND  
TRANSPORTATION CONCEPT. (U)

DESCRIPTIVE NOTE: TASK REPT.,

MAR 67 49P DE LONG, MAX M. ;

GOSS, DAVID M. ;

REPT. NO. RACIC-TR-59

CONTRACT: F33657-67-C-0810, ARPA ORDER-935

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ROADS, TROPICAL REGIONS),  
THAILAND, FEASIBILITY STUDIES, TRANSPORTATION,  
CARGO VEHICLES, TRAFFIC, VOLUME,  
TRAFFICABILITY, CONSTRUCTION, MAINTENANCE,  
COSTS, COMPATIBILITY, AMPHIBIOUS VEHICLES,  
PASSENGER VEHICLES, ECONOMICS (U)

IDENTIFIERS: AGILE PROJECT, ROTE (ROLLIGON BAG  
OR TERRA-TIRE EQUIPPED), OFF-ROAD VEHICLES,  
ALL-WEATHER TRANSPORTATION (U)

THIS REPORT IS A FEASIBILITY STUDY OF A REMOTE AREA  
LAND TRANSPORTATION CONCEPT CONSISTING OF A VEHICLE-  
ROADWAY COMBINATION. THE CONCEPT DESCRIPTION  
INCLUDES A DISCUSSION OF THE ROTE VEHICLES AND OF  
THE REQUIRED CAPACITY AND CONSTRUCTION OPERATIONS FOR  
MINIMAL ROADS. THE PRELIMINARY ASSESSMENT OF THE  
CONCEPT'S FEASIBILITY INCLUDES DISCUSSIONS OF COSTS  
FOR (1) ROAD CONSTRUCTION AND MAINTENANCE,  
(2) THREE EXAMPLES, AND (3) VEHICLE  
OPERATION, AND DISCUSSION OF POTENTIAL USEFULNESS OF  
THE CONCEPT FOR (1) LAW-ENFORCEMENT AGENCIES,  
(2) PASSENGER TRANSPORTATION, AND (3) FREIGHT  
HAULING. THERE IS A COMPARISON OF MINIMAL- AND  
CONVENTIONAL-ROAD INVESTMENT AND RETURN. (AUTHOR) (U)

UNCLASSIFIED

•AEROSPACE CORP EL SEGUNDO CALIF EL  
SEGUNDO TECHNICAL OPERATIONS

TR-0158(3515-01)-1  
A TECHNIQUE FOR ESTIMATING  
SPACE POWER SYSTEM COSTS.  
(SAMSO-TR-67-112)  
AD-663 414

TR-1001(2515-01)-1  
UNCERTAINTY IN LAUNCH VEHICLE  
COST ESTIMATING EL SEGUNDO  
TECHNICAL OPERATIONS.  
(SAMSO-TR-67-33)  
AD-661 254

TR-1001(2515-01)-2  
TECHNICAL DIRECTION AND  
EVALUATION OF COST ANALYSIS FOR  
SPACE SYSTEM STUDIES.  
(SSD-TR-67-98)  
AD-662 886

TR-1001(2573-34)-1  
USE OF AN EMPIRICAL PRODUCT-  
ORIENTED COST DATA BANK FOR  
PREDICTING AND NEGOTIATING FUTURE  
SATELLITE SYSTEM COSTS.  
(SSD-TR-67-150)  
AD-659 329

•AEROSPACE CORP EL SEGUNDO CALIF LAB  
OPERATIONS

TR-0158(3250-10)-2  
CRITERIA FOR FASTENER SYSTEM  
DESIGN.  
(SAMSO-TR-67-94)  
AD-664 546

•AIR FORCE AERO PROPULSION LAB WRIGHT-  
PATTERSON AFB OHIO

AFAPL-CONF-68-3  
AN ASSESSMENT OF THE  
PRACTICALITY OF ORBITAL  
MAINTENANCE.  
AD-658 454

•AIR FORCE CAMBRIDGE RESEARCH LABS L G  
HANSCOM FIELD MASS

AFCLR-68-0054  
HUMAN FACTORS AND THE DESIGN OF  
TIME SHARING COMPUTER SYSTEMS.  
AD-666 443

•AIR FORCE INST OF TECH WRIGHT-  
PATTERSON AFB OHIO SCHOOL OF

ENGINEERING

GSN/SH-67-2/7

INVESTIGATION OF LEARNING CURVE  
AND COST ESTIMATION METHODS FOR  
CARGO AIRCRAFT.  
AD-665 464

•AIR FORCE LOGISTICS COMMAND WRIGHT-  
PATTERSON AFB OHIO LOGISTICS  
SIMULATION CENTER

BID EVALUATION FOR PROCUREMENT  
OF AVIATION FUEL AT DFSC: A CASE  
HISTORY.  
AD-651 531

•AIR FORCE MISSILE DEVELOPMENT CENTER  
HOLLOMAN AFB N MEX DIRECTORATE OF  
TEST TRACK

MDC-TR-67-76  
CRITERIA FOR SELECTING SOLID  
ROCKET MOTORS AS TRACK TEST  
PROPULSION.  
AD-658 841

•AIR FORCE OFFICE OF SCIENTIFIC  
RESEARCH ARLINGTON VA

AFOSR-67-0231  
MILITARY TRANSFER OF  
TECHNOLOGY: INTERNATIONAL TECHNO-  
ECONOMIC TRANSFERS VIA MILITARY BY-  
PRODUCTS AND INITIATIVE BASED ON  
CASES FROM JAPAN AND OTHER PACIFIC  
COUNTRIES.  
AD-660 537

AFOSR-67-1998  
SYSTEM DESIGN, EVALUATION AND  
COSTING--IN PLAIN ENGLISH,  
AD-657 780

AFOSR-67-2248  
STUDY OF DOCUMENTATION  
PROCEDURES AND MECHANISMS.  
AD-659 625

•ARMY AVIATION MATERIEL COMMAND ST  
LOUIS MO

PROCUREMENT: MULTIPLE  
INCENTIVE CONTRACTING, SCIENTIFIC  
CONTRACTING WITH ACCENT ON TRADE-  
OFF.  
AD-653 643

•ARMY ELECTRONICS COMMAND FORT



ARM-CAL

WONINGOUTH N J

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ECOM-01743-6

VALUE ENGINEERING QUARTERLY  
REPORT FOR LIGHT OBSERVATION  
HELICOPTER AVIONICS PACKAGE,  
AD-663 795

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ECOM-02542-3

WIDEBAND DIGITAL MODULATION AND  
DETECTION TECHNIQUES FOR  
TROPOSCATTER,  
AD-653 159

ARMY ENGINEER RESEARCH AND  
DEVELOPMENT LABS FORT BELVOIR VA  
TECHNICAL INFORMATION AND LIBRARY  
BRANCH

• • •

AN APPROACH TO COST  
EFFECTIVENESS OF A SELECTIVE  
MECHANIZED DOCUMENT PROCESSING  
SYSTEM,  
(ATLIS-12)  
AD-651 986

ARMY MATERIEL COMMAND WASHINGTON D C

• • •

LEARNING CURVE METHODOLOGY FOR  
COST ANALYSTS,  
AD-661 052

ARMY NITICK LABS MASS CLOTHING AND  
ORGANIC MATERIALS LAB

• • •

USA-MLABS-TR-68-20-CH  
DIRECT MOLDED SOLE BOOTS,  
(PL-19)  
AD-666 736

ARMY NITICK LABS MASS GENERAL  
EQUIPMENT AND PACKAGING LAB

• • •

USA-MLABS-TR-68-23-GP  
DEVELOPMENT OF THE HEATER  
IMMERSTION, M-47, LIQUID-FUEL-FIRED,  
FOR CORRUGATED CANS,  
AD-665 390

ARMY RESEARCH OFFICE DURNAN N C

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AROD-714012  
ADVANCED MATERIAL SYSTEMS  
PLANNING,  
AD-663 970

BALLISTIC RESEARCH LABS ABERDEEN  
PROVING GROUND MD

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BRL-1382

DOUBLE SAMPLING FOR DESTRUCTIVE  
TESTING,  
AD-664 762

BATTELLE MEMORIAL INST COLUMBUS OHIO  
COLUMBUS LABS

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DETERIORATION OF FUELS AND FUEL-  
USING EQUIPMENT,  
AD-662 266

BATTELLE MEMORIAL INST COLUMBUS OHIO  
REMOTE AREA CONFLICT INFORMATION  
CENTER

• • •

RACIC-TR-59

A FEASIBILITY STUDY OF A REMOTE  
AREA LAND TRANSPORTATION CONCEPT,  
AD-615 392

BOEING SCIENTIFIC RESEARCH LABS  
SEATTLE WASH MATHEMATICS RESEARCH  
LAB

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DJ-82-0670

ON A BRANCH-AND-BOUND METHOD  
FOR SEPARABLE CONCAVE PROGRAMS,  
AD-663 480

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MATHEMATICAL NOTE-527

ON A BRANCH-AND-BOUND METHOD  
FOR SEPARABLE CONCAVE PROGRAMS,  
AD-663 480

BOLT BERANEK AND NEBHAN INC CAMBRIDGE  
MASS

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SCIENTIFIC-2

HUMAN FACTORS AND THE DESIGN OF  
TIME SHARING COMPUTER SYSTEMS,  
(AFCL-68-0059)  
AD-666 443

CALIFORNIA UNIV BERKELEY INST OF  
TRANSPORTATION AND TRAFFIC  
ENGINEERING

• • •

ALLOCATING THE COSTS OF  
ALLEVIATING SUBSONIC JET AIRCRAFT  
NOISE,  
AD-668 798

CALIFORNIA UNIV BERKELEY OPERATIONS  
RESEARCH CENTER

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ORC-67-5

THE COST FUNCTION,  
AD-648 408

CAS-GAU

•CASE-WESTERN RESERVE UNIV CLEVELAND  
OHIO

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ADVANCED MATERIAL SYSTEMS  
PLANNING,  
(AROD-7146:2)  
AD-663 970

•COLD REGIONS RESEARCH AND ENGINEERING  
LAB MANOVER N H

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CRREL-TR-198  
FOG DISPERSAL EXPERIMENTS USING  
PROPANE AT WALLA WALLA, WASHINGTON,  
AD-653 636

•COMMUNICATION SYSTEMS INC PARAMUS N  
J

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CSI-67-TR-2380  
WIDEBAND DIGITAL MODULATION AND  
DETECTION TECHNIQUES FOR  
TROPOSCATTER,  
(ECOM-02342-3)  
AD-653 157

•DECISION STUDIES GROUP PALO ALTO  
CALIF

• • •  
TWO PAPERS ON ADAPTIVE  
INVENTORY CONTROL,  
AD-666 574

•ELECTRONIC SYSTEMS DIV L G HANSCOM  
FIELD MASS

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ESD-TR-67-66  
MANAGEMENT HANDBOOK FOR THE  
ESTIMATION OF COMPUTER PROGRAMMING  
COSTS,  
AD-648 750

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ESD-TR-67-69  
A COST DATA RESEARCH PROGRAM  
PROPOSAL WITH SPECIAL EMPHASIS ON A  
TECHNICAL CHARACTERISTICS  
DICTIONARY,  
AD-650 253

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ESD-TR-67-412  
APPLICATION OF COST-  
EFFECTIVENESS ANALYSIS TO EDP  
SYSTEM SELECTION,  
AD-667 522

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ESD-TR-67-452  
COST REPORTING FOR DEVELOPMENT  
OF INFORMATION PROCESSING SYSTEMS,  
AD-657 793

•FEDERAL AVIATION ADMINISTRATION  
WASHINGTON D C SYSTEMS RESEARCH  
AND DEVELOPMENT SERVICE

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FAA-RD-67-18  
RADIOISOTOPE TAXI GUIDANCE  
SYSTEM PHASE I. FEASIBILITY STUDY,  
AD-655 922

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FAA-RD-67-28  
COST/BENEFIT ANALYSIS FOR ALL-  
WEATHER LANDING SYSTEM (AWLS)  
CATEGORY II AND III,  
AD-661 830

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FAA-RD-67-36  
ECONOMIC AND TECHNICAL  
FEASIBILITY ANALYSIS OF  
ESTABLISHING AN ALL-WEATHER V/STOL  
TRANSPORTATION SYSTEM,  
AD-657 330

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FAA-RD-67-54  
COST/BENEFIT ANALYSIS OF  
TELEVIEWED RADAR FOR GENERAL  
AVIATION  
AD-658 514

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FAA-RD-67-62  
UNINTERRUPTIBLE POWER SYSTEM  
MODULE ANALYSIS,  
AD-666 823

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FAA-RD-67-70  
ALTERNATIVE APPROACHES FOR  
REDUCING DELAYS IN TERMINAL AREAS,  
AD-663 089

•FOREST PRODUCTS LAB MADISON WIS

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FSRP-FPL-88  
CONSTRUCTION OF NU-FRAME  
RESEARCH HOUSE: UTILIZING NEW WOOD-  
FRAME SYSTEM,  
AD-667 766

•GARRETT CORP TORRANCE CALIF  
AIRESEARCH MFG DIV

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UNINTERRUPTIBLE POWER SYSTEM  
MODULE ANALYSIS,  
(FAA-RD-67-62)  
AD-666 823

•GAUTNEY AND JONES COMMUNICATIONS INC  
WASHINGTON, D C

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TR-66,0012,001  
COMMUNICATIONS STUDY STATE OF

GEN-INS

MISSISSIPPI.  
AD-667 489

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TR-66,0012,003  
COMMUNICATIONS STUDY STATE OF  
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AD-667 461

•GENERAL LEARNING CORP WASHINGTON D  
C

• • •  
A PLAN FOR THE ESTABLISHMENT OF  
A COMPUTER-AIDED INSTRUCTION  
RESEARCH AND DEVELOPMENT CENTER,  
AD-657 348

•GENERAL MOTORS CORP CLEVELAND OHIO  
ALLISON DIV

• • •  
A STUDY TO DETERMINE THE  
FEASIBILITY OF DEFINING EARTHMOVING  
VEHICLE SYSTEMS BY ANALYTICAL  
TECHNIQUES,  
AD-650 769

•GEORGE WASHINGTON UNIV ALEXANDRIA VA  
HUMAN RESOURCES RESEARCH OFFICE

• • •  
PROFESSIONAL PAPER 31-67  
COMPUTER-ADMINISTERED  
INSTRUCTION VERSUS TRADITIONALLY  
ADMINISTERED INSTRUCTION:  
ECONOMICS,  
AD-656 612

•GEORGE WASHINGTON UNIV WASHINGTON D  
C LOGISTICS RESEARCH PROJECT

• • •  
SERIAL T-192  
SIMULATION OF A MULTI-ECHOLON  
LOGISTICS SUPPORT SYSTEM,  
AD-654 578

•HAYES BEAV MATTER: AND MATTER:  
ROANOKE VA

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METHODS OF SHELTER COST  
ANALYSIS,  
AD-646 847

•HERNER AND CO WASHINGTON D C

• • •  
SYSTEM DESIGN, EVALUATION AND  
COSTING--IN PLAIN ENGLISH,  
(AFOSR-67-1998)  
AD-657 788

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STUDY OF DOCUMENTATION  
PROCEDURES AND MECHANISMS,

(AFOSR-67-2248)  
AD-659 825

•HOWARD UNIV WASHINGTON D C DEPT OF  
ECONOMICS

• • •  
MILITARY TRANSFER OF  
TECHNOLOGY: INTERNATIONAL TECHNO-  
ECONOMIC TRANSFERS VIA MILITARY BY-  
PRODUCTS AND INITIATIVE BASED ON  
CASES FROM JAPAN AND OTHER PACIFIC  
COUNTRIES,  
(AFOSR-67-0231)  
AD-660 037

•IIT RESEARCH INST CHICAGO ILL

• • •  
CIVIL DEFENSE SHELTER OPTIONS  
FOR FALLOUT AND BLAST PROTECTION  
(DUAL-PURPOSE),  
AD-655 284

•INSTITUTE FOR DEFENSE ANALYSES  
ARLINGTON VA

• • •  
IDA/HQ-67-6135  
A HEURISTIC COMPROMISE BETWEEN  
PROBABILITY OF SUCCESS AND LIMITED  
RESOURCES,  
AD-657 168

• • •  
IDA/HQ-67-6607  
THE SUPPLY OF FIRST-TERM  
MILITARY OFFICERS,  
AD-662 661

• • •  
IDA/HQ-67-6813  
ON THE ECONOMIC APPLICATION OF  
AIRLIFT TO RESUPPLY AND ITS IMPACT  
ON INVENTORY LEVELS,  
AD-662 657

•INSTITUTE FOR DEFENSE ANALYSES  
ARLINGTON VA PROGRAM ANALYSIS DIV

• • •  
S-290  
THE SUPPLY OF FIRST-TERM  
MILITARY OFFICERS,  
(IDA/HQ-67-6607)  
AD-662 661

•INSTITUTE FOR DEFENSE ANALYSES  
ARLINGTON VA RESEARCH AND  
ENGINEERING SUPPORT DIV

• • •  
RP-P-338  
A HEURISTIC COMPROMISE BETWEEN  
PROBABILITY OF SUCCESS AND LIMITED  
RESOURCES,

IDA/HQ-67-41351  
AD-657 168

• INSTITUTE FOR DEFENSE ANALYSES  
ARLINGTON VA SYSTEMS EVALUATION DIV  
\* \* \*

RM-P-376  
ON THE ECONOMIC APPLICATION OF  
AIRLIFT TO RESUPPLY AND ITS IMPACT  
ON INVENTORY LEVELS,  
(IDA/HQ-67-6813)  
AD-662 659

• LITTON SYSTEMS INC WOODLAND HILLS  
CALIF GUIDANCE AND CONTROL SYSTEMS  
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13. ABSTRACT <p>This bibliography consists of references on Cost Effectiveness Analysis and Cost references related to cost estimation and evaluation, cost effectiveness, cost analysis and methodology in research and development, management, decision making and systems value engineering.</p> <p>This volume represents a collection of 160 Unclassified-Unlimited references in the DDC data bank that have been cataloged since 1967.</p>		

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<ul style="list-style-type: none"> <li>* Cost Effectiveness</li> <li>* Value Engineering</li> <li>* Systems Engineering</li> <li>Costs</li> <li>Operations Research</li> <li>Management Planning</li> <li>Bibliographies</li> <li>Aircraft</li> <li>Weapon Systems</li> <li>Production</li> <li>Management Engineering</li> <li>Defense Systems</li> <li>Effectiveness</li> <li>Decision Making</li> <li>Analysis</li> <li>Advanced Planning</li> <li>Guided Missiles</li> <li>Mathematical Models</li> <li>Reliability</li> <li>Procurement</li> <li>Logistics</li> <li>Research Program Administration</li> <li>Programming (Computers)</li> </ul> <p>Open-ended Terms</p> <p>Tradeoffs</p> <p>Systems Analysis</p> <p>Cost Estimates</p>						

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